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TI: KANSAS MEDICINE

# MEDICINE

JOURNAL OF THE KANSAS MEDICAL SOCIETY

January 1993

Volume 94, Number 1



- Prolonged QT Interval in Newborns
- President's Message: "Managed Competition"
- Perinatal Transmission of Hepatitis B
- More on Heparin Therapy



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**ABOUT OUR LOGO**

In January 1935, a new logo appeared on the cover of KANSAS MEDICINE for the first time. This device represents two stethoscopes: the original monaural type as used by Laënnec, and the modern binaural variety. The logo was designed expressly for KANSAS MEDICINE by renowned graphic designer Bradbury Thompson, a native of Topeka and friend of two former editors of the journal, Dr. W.M. Mills and Dr. Lucien Pyle. As another former editor, Dr. Orville R. Clark, wrote in January 1955, the logo "has become as much a part of the journal as any of the features on the inside and is something which is ours alone."

It has become customary in recent years for the January cover of KANSAS MEDICINE to recognize the annual invasion of the Golden City by the state's politicians—and others. More often than not, this has been a picture of the Capitol, and this time it is Jim Hamil's rendition. The most compelling portion of that structure is the dome, which provides an unmistakable feature of the skyline. Kansans are supposed to feel a sense of pride and ownership as they gaze on that dome. The only trouble is they don't own it.

A chance discovery of a 1986 story in the Topeka *Capital-Journal* over the by-line of UPI correspondent James C. Braden disclosed the truth. It seems that about the turn of the century, the Legislature had a custom of granting to retiring legislators, staff and others, the desks, chairs and such which they had used during their service. In 1901, a Senator Nofzger and the Secretary of the Senate, Charles M. Sheldon (not, as far as we can tell, the well-known Topeka minister of that name), decided to put a stop to the custom by introducing a resolution granting ownership of the dome to Mr. Sheldon and his "assigns and heirs forever." The resolution passed and apparently still stands.

Mr. Sheldon is reported to have moved to Tulsa. The current heirs are his grandchildren, Richard Sheldon and Mrs. Ruth Sheldon Knowles. Richard was formerly chief geologist with the US Geological Survey in Washington, but later moved to Honolulu. Mr. Sheldon reported that in 1958, he attempted to climb up the inside of the dome without paying the 25-cent charge. The guard was not impressed with his claim of ownership.

Oh, yes. He did appoint a friend, William Hambleton Lawrence, Honorary Custodian. Lawrence has done well, as the structure has been kept up over the years at no expense to the owners. At least, the resolution did apparently put a stop to the Legislature's largess regarding the furniture.

If our friends in southwest Kansas succeed in seceding, they might get the idea of buying the dome and moving it to Meade, or wherever, as a start on their own state house. They should be advised, however, that a provision of the resolution was that it could not be sold or moved. Back to the old drawing board.

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# KANSAS MEDICINE

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# The Genie

**W**e took note some time ago of the ambitious Human Genome Analysis Program (HUGO to its friends), the international effort to map completely the human genome. From a report in the *Journal of the Royal Society of Medicine*, we can forward something of an interim report. The effort has gained a momentum of sorts with some early returns coming in and, though the inevitable mad scientist stories have appeared in the tabloids, even the limited progress to date offers much promise.



The global effort is being coordinated through intermittent meetings of the committees involved, there being a committee assigned to the study of each chromosome. Findings are reported at workshops, and dramatic prospects are suggested, but the emphasis is on immediate progress and direction. Such reports are subjected to scrutiny and methods are questioned — and, since the effort *is* international, methodology and national interests inevitably intrude. Still, the tone of the report suggests the air of civilized behavior our British friends favor. For example, the question of patenting of genetic findings and applications poses the conflict between basic science and individual, even national, rights, ultimately commercial versus human betterment applications.

Collaboration versus competition? Altruistic intents are fine, but there is some effort toward patenting basic science results (as opposed to the practical applications), bringing up the matter of “intellectual property.” Regarding the process, the mapping of each chromosome requires breaking it down into progressively smaller components, cloning (in some cases, at least) through a process utilizing yeast organisms (identified in the trade as “Yeast Artificial Chromosomes”). Thus, the process moves toward eventual individual gene isolation. It is not enough to say that chromosome #7 carries the gene for cystic fibrosis (as has been determined), but the effort must go beyond to determine the nature of the protein involved (and previously unknown sequences have been found).

Such identifications are good news, but at the same time it has been determined that the seg-

ment of #7 related to cystic fibrosis constitutes only 0.2% of the DNA content of the chromosome. This points up the fact that in the current state of things, much of the protein content is referred to as “rubbish.” But the researchers are not unmindful that today’s rubbish may be tomorrow’s miracle. Witness our own experiences in finding unexpected agents in unexpected places. The history of science is replete with such events which, in fact, constitute one of the prime values of basic science. And some idea of the overall effort is gained from the report that at this time, 5,000 genes (out of an estimated 100,000) have been mapped, that is, applied to particular chromosomes. This has produced some genetic sequences not known before, so their protein product is still unrecognized.

Ethical questions are on a high level of concern. Any success seems to compound the matter, since it introduces new potentialities in transferring them from the theoretical to the practical. The scholarly, selfless attitude has failed to survive other efforts in no small number of scientific conflicts, and this may be no exception in some cases.

What of the privacy of gene records? We know all too well the zeal with which the public communicators seek out information considered newsworthy or, in their favorite phrase, essential to the public’s right to know. Groups carrying certain traits may object to the identification — even if it is essential to deriving medical benefit. It is not cynical to foresee that good and desirable efforts can be distorted or prostituted by personal, non-clinical applications. And the results may apply not just to individuals but to families, extending the profession’s responsibilities in their use.

The title implies the good and bad potentials for the effort, and discerning the difference will occupy much of the time and intellectual effort of our progeny. There is a distinct parallel with two other great challenges we are contending with: the atom and space. The former was long accepted as the smallest form of matter, but it continues to be taken apart. The astrophysicists probe units hundreds of thousands of light years away. And the potential for the genes to tell their tales is unlimited. One thing is certain. We’ll not get the genie back in the bottle, so we must use its services wisely. D.E.G.

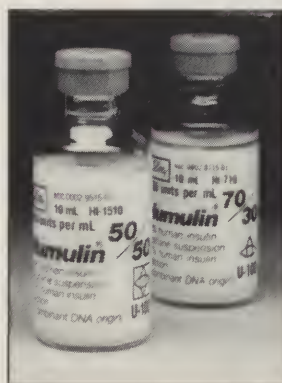




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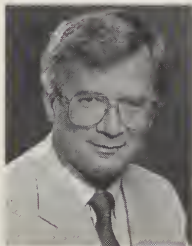
\* Humulin® 70/30 (70% human insulin isophane suspension, 30% human insulin injection [recombinant DNA origin]).



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# Managed Competition: Answer to the Health Care Dilemma?

**T**he elections are over. Congress has started back to work with a brand-new and very different mix of representatives and senators. Both the Senate and House remain in the control of the Democrats. Our state legislature has returned with a strong Republican majority in both the House and Senate. High on the agenda for both bodies of legislative mischief is health care. In Kansas, probably the number-one item is workers' compensation, but both Congress and our legislature will be looking at health care reform.



The latest buzzword in Washington deals with the concept of "managed competition." This is a proposal put forth by the conservative democratic forum and also by Dr. Paul Elwood and the Jackson Hole Group, a health care think tank. You should understand some of the thinking behind it so we can better organize our approach to this concept.

Managed competition is premised on encouraging consumers to shop wisely for health plans. This program would use strong tax incentives to encourage providers and health insurance companies to form "health partnerships" which would be more publicly accountable for cost and quality. These would be large regional purchasing cooperatives which would give individuals and small businesses the benefits of greater "buying power." A national board would be established to formulate a uniform set of *effective* health benefits. These would have a tax-favored status and would require standard benefits, insurance reforms and public disclosure of information on medical outcomes, cost effectiveness and consumer satisfaction.

## Health-Planned Purchasing Co-ops

To do this, the proposal would set up health-planned purchasing co-ops (HPPCs). They would be state-chartered and statewide, though they could have single units in large metropolitan areas. They would include, at a minimum, all businesses with 1,000 or fewer employees but could be expanded to cover any number of employees. Every individual in business would be

offered a *menu of accountable plans* with standard descriptions of price, quality and outcomes from which the individual could choose. The HPPC would collect the premiums and distribute them to individual plans based on the number of participants and federal risk-adjusted criteria. There would be geographic and age adjustments for fees and premiums. This would eliminate COBRA requirements for continued coverage, as the individuals would be permitted to continue their HPPC plan after they left employment. There would be a small administrative charge, an "administrative surcharge," tacked onto each policy to pay overhead.

## Standardization of the Program

A national health board would be established to oversee the health market, much as the Securities and Exchange Commission oversees the financial market. This board would be required to establish and update the standard health care benefit package requirement based on clinical effectiveness of treatment and preventive measures. Standard reporting of prices, health outcomes and consumer satisfaction would be published. The national board also would look at, develop and adjust risk categories for health care and apply them to the formula for the health plan premiums. They would also develop a uniform information collection process for quality of care and outcomes to be distributed to consumers.

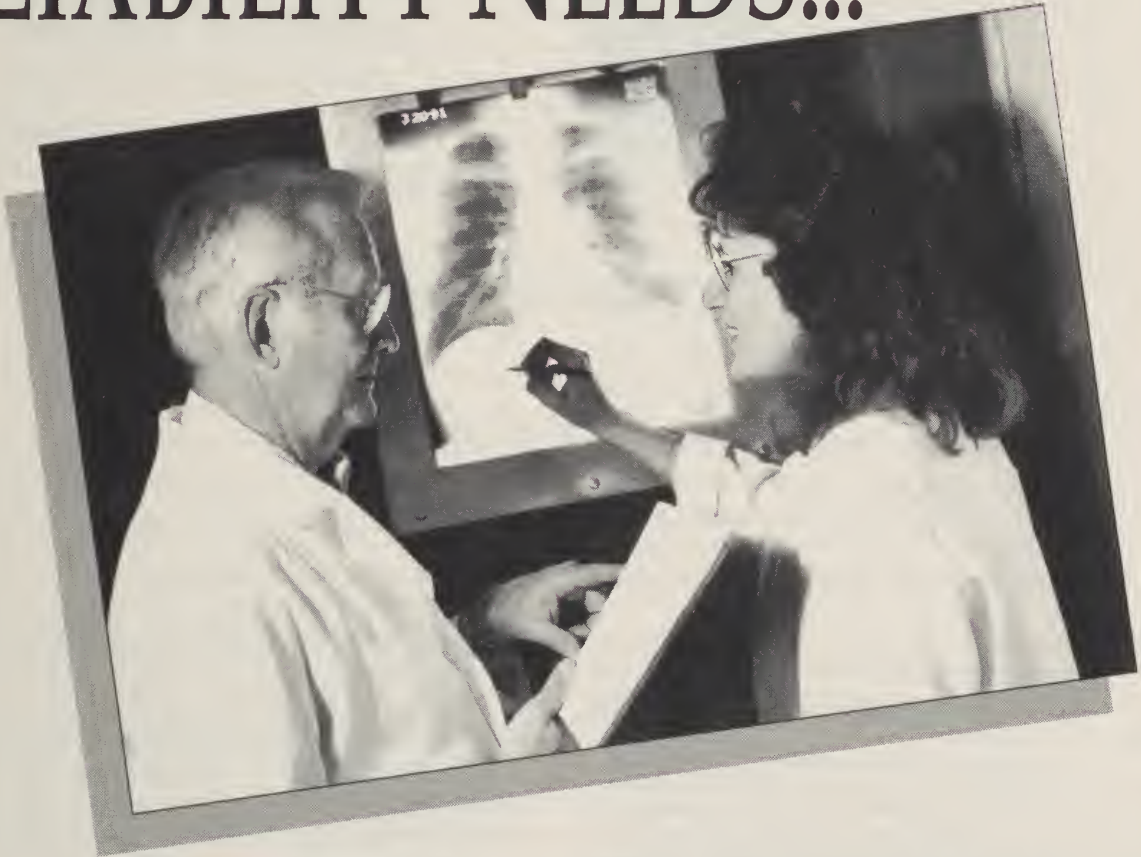
This board would be independent of Congress, but Congress could still vote on the board's action by an "up or down vote." There would be a requirement for the establishment of expert advisory boards to make recommendations for benefits and health care standards.

One of the main functions would be to facilitate health care access for the poor. This would replace Medicaid and link it to welfare as defined by the states. The only exceptions would be pregnant women and children and preventive health programs (e.g., immunizations), which would be federally funded separately and would not require any co-payment. The plan would offer free enrollment and federally paid health plan premiums for individuals who have an income of approximately

(Continued on page 11.)



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# Is a Chiropractor a Physician?

WAYNE T. STRATTON, J.D.,\* *Topeka*

**F**or ten years or so the Board of Healing Arts struggled with the question of whether a chiropractor could advertise himself or herself as a physician. A former attorney for the Board had determined that such designation was permitted by statute. This was followed in 1987 by a formal opinion of the Attorney General that the designation was not allowed under Kansas law.



At its meeting on December 1, 1990, the Board voted to follow the Attorney General's opinion. Soon thereafter nine Kansas chiropractors sued the Board to enjoin enforcement of the Board's decision.

Because of the interest and concern of its members, the Kansas Medical Society intervened in the action. The Society asserted that under Kansas law only practitioners licensed as doctors of medicine and surgery and as doctors of osteopathic medicine and surgery are physicians.

The matter was heard by the Shawnee County District Court, which concluded that Kansas law restricted the term to medical and osteopathic practitioners, saying:

The primary difference among the types of practitioners is that individuals who practice medicine and surgery or osteopathy are, by statute, allowed to prescribe medication and conduct surgical procedures. Practitioners of chiropractic are specifically prohibited from engaging in these activities. Further, the statutes defining practitioners of medicine and surgery and practitioners of osteopathy specifically use the word "physician" when referring [to] the practitioner. The definition of chiropractor does not use the word physician.

The Court concluded that chiropractors were not permitted by Kansas law to utilize the term

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"Names are things. They certainly are influences. . . Impressions are left and opinions are shaped by them."

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Tryon Edwards

"physician," either singly or in connection with any other term.

A notice of appeal was filed, but the appeal was abandoned. Thereafter the plaintiffs attempted to remove the action to the United States District Court, but the case was remanded to the state court. Subsequent efforts by the Board of Healing Arts to modify its position were dealt with by a final decision of the court urging compliance with the law.

This lawsuit has confirmed the clear statements contained in the Kansas statutes. While further attempts to erode the legislative distinction between practitioners may still occur, the matter should be laid to rest by the court's decision.

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\*KMS Legal Counsel.

Comments appearing herein are not intended as a substitute for legal analysis or advice. Answers to legal questions depend largely upon the particular facts of a case. The reader is urged to consult an attorney for answers to specific legal questions.

These comments do not necessarily represent the views of KANSAS MEDICINE, or the Kansas Medical Society. For further information, contact Mr. Stratton, 515 S. Kansas, Topeka, KS 66603, 1-800-332-0248.



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Rural Health Education and Services  
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The University of Kansas School of Medicine-Wichita

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# Dinner with Legislators Is Set for February

**D**ear Physicians of Kansas:

We are looking ahead as 1993 dawns bright with promise. Your auxiliary has a full February planned, and we'd like you to participate. With much pleasure, I invite you to join us for dinner with your legislators on Wednesday, February 23, at the Top of the Tower, Bank IV Building, Topeka. The cocktail hour will be from 6:00 to 7:00 p.m., followed by dinner at 7:00. The cost is \$20 each. Reservations may be made by calling Nancy Sullivan at the KMS office (800-332-0156). We also would like to invite *your* legislator. Please let Nancy Sullivan or Chip Wheelen know as soon as possible the name of the legislator you would like us to invite. KMS will handle the invitations and the cost of the legislators' dinners. You will serve as host or hostess for them at your table.

Cindy Warrick, our KMSA legislative vice-president, has worked hard to arrange a good dinner and pleasant evening for us to get better acquainted with our lawmakers. This year—as always—will prove that we must play an active role in the legislative arena. Having a face and a voice to go with our names certainly helps us be heard when vital issues affecting medicine are being considered.

The dinner with our legislators is an important component of our Winter Conference, which will be held February 23 and 24 at the KMS office. Also of interest to you will be our Mini Constituent Workshop, scheduled for Wednesday from 10:00 a.m. to 12:00. Our guest speaker will be well known to many of you. Jim Braden is a former Speaker of the House. Mr. Braden will be helping us to be better constituents, telling us the best ways to contact legislators to inform them of our views and warning us of many common pitfalls.

We will close our Winter Conference with a popular guest speaker, Ron Willis, who will speak on "Relationships." Ron was so appreciated at our annual convention that he was requested to amplify the topic. His down-home basic truths remind us to differentiate between the truly im-



portant things and the "urgent" ones that steal our most valuable asset: time.

Also in February the AMAA Leadership Confluence II will be held in Chicago. We are sending five county presidents elect: Gaudie Feldmeyer, Meade; Debby Young, Wichita; Elaine Adams, Hays; Karen Cox, Overland Park; and Marla McKee, Hutchinson. The three state officers who will be attending the conference are Cathy Wilcox, Hays; Nancy Craig, Hutchinson; and myself.

February 9 will find the Kansas Medical Society Auxiliary hosting a four-state workshop on volunteer management. Working together with Missouri, Nebraska and Iowa, we will bring Marlene Wilson from Colorado Springs to help us all deal with the ever-changing face and needs of volunteers in the 90s.

As you can see, your auxiliary has its sleeves rolled up and is ready to get to work. I have certainly appreciated the warm reception as I have traveled the state with Dr. Meidinger. I feel honored and proud to serve you and the Kansas Medical Society Auxiliary. Our team is reaching out together with the KMS to meet the challenge of providing better health care for the citizens of Kansas. The team just awaits the next call to get into the game.

Thanks, Coaches, from the Benevolent, Enthusiastic, Active Team!

*Terrie Browning*



## PRESIDENT'S MESSAGE

(Continued from page 6.)

200% or less of the federal poverty level. There would be a sliding scale up to another 200% of poverty level to enable low-income individuals to enroll in the plan. This would eliminate Medicaid and establish federal standards for care of the poor.

Rural and urban poverty areas would be monitored to see if there was "sufficient" competition to provide appropriate care. Increased funding would be made available for the community and migrant health care centers, national health care corps and area health education centers. Preventive health care services would be established on a uniform basis across the country according to federal mandates, and there would be no co-payment.

Malpractice reform is mentioned as an important component of this plan and would limit non-economic damages and statutes of limitations, also making them uniform nationwide. There would be other malpractice reforms as well, but these have not been spelled out.

A reduction of paperwork would be achieved by establishing a national standard reporting system and encouraging, if not mandating, paperless claims.

All of this would be paid, at least in part, by eliminating the income limit for Medicare, currently established at \$130,000, capping deductibility of health care planned expenses at the price of the cost-effective health plans, and redirecting federal Medicaid spending.

## Would It Work in Kansas?

As you can tell, this program is far-reaching, will require careful study and will have significant impact on health care throughout the nation. Unfortunately, most of this program is based on experience in a large metropolitan area, Minneapolis, where HMOs and PPOs have a fairly long track record. There is a serious concern, I think, in how this program can help or even encourage the development of health care in rural areas. It may make rural health care even more financially difficult. It will require a state health care commission to oversee the Kansas health plans and possibly to act as the negotiator for a clearinghouse for the development of the health care plans, and for establishing Kansas outcomes and quality standards.

We will be following this and other plans very carefully. I believe at this time, the state of Kansas will not make significant progress in developing an independent plan, but will probably wait and see what happens on the national level. No doubt the state will continue to look at insurance reform, cost containment and medical school education funding. In the meantime, I would advise you to look at your practices to see how you can make them more efficient by reducing overhead, developing quality standards and *sharpening your negotiating skills.*

*Richard M. Erdinger, M.D.*

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## THE WAY IT WAS

(From the Journal of the Kansas Medical Society, June 1932.)

### PRESIDENT'S MESSAGE

#### The Importance of Recognizing the Human Element in Medical Organizations

P. S. Mitchell, M.D.  
Iola, Kansas

— I am prompted to the following recommendations for your consideration.

Industrial medicine is already with us and established. It is our duty to accept it, study it and regulate it as a part of our body before it falls under the control and regulation of some authority whose vision is foreign to our own.

Clinics are with us. They serve an exalted purpose but likewise should not be allowed to be a law unto themselves.

Group medicine is striving hard to obtain a lodgement. It is my belief, that it is voicing the views of this society when I say, this should be tabooed with a firm hand.

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In view of the present financial depression of the country I shall only recommend the following for your future but I hope serious consideration.

The drug addict is the greatest menace of the day to the profession and the public. He is responsible for a large percent of all types of crime. He uses every resource, of which he has many, to catch the unwary physician off his guard. On gaining one of their confidence it may offer a surprise, to determine the men who became thoughtlessly victimized by them. It is my recommendation that an early plan be studied for a home of incarceration for these unfortunate menaces, to be recommended to our state authorities.

Confirmed inebriates should be housed in the same home.

Mild ailments of adult age should have a home to furnish a relief to society. Means of sterilization should be studied and carried out.

The housing of the venereals at the state penitentiary was a war measure and it is wrong in principle. To continue this institution as a well studied provender for moral uplift as well as disease correction is a noble effort to be commended but it should be removed from its present association with the state penitentiary at the earliest possible opportunity.

## VOX DOX

### Wanted: Your Accounts of Severe Allergic Reactions

To the Editor:

I would like any report of deaths or near deaths from anaphylaxis due to food or insect allergy. I would also like reports of deaths that were prevented by the use of epinephrine kits.

Claude A. Frazier, M.D.  
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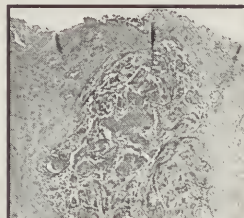
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# Dr. Schloesser Receives Eliot Award

ALLISON PETERSON\*

**E**arly in 1992, the American Public Health Association (APHA) committee designated to select the 1992 recipient of the Martha May Eliot Award began its work. What American physician merited this recognition? The standards were high; the qualifications demanded near perfection.

Kansans are proud of the committee's choice. Patricia Turk Schloesser, M.D., of Topeka, who has championed maternal and child health throughout her career, received the award in November.

The award is given to an individual who has made an outstanding contribution to education, administration, or research in maternal and child health. It recognizes the high quality and originality of the recipient's achievements, rather than longevity of service. Dr. Martha May Eliot, whose name the award carries, served as Chief of the Children's Bureau prior to her retirement in 1956. She was a moving force in APHA's Section on Maternal and Child Health and served as APHA President in 1958.

Since 1945, when Dr. Schloesser graduated from medical school at the University of Wisconsin (Madison), she has focused on the public health of mothers and children. While interviewing with a physician in Topeka, Dr. Schloesser became infected with an enthusiasm for public health. "The excitement of what could be done in the field," she said, challenged her to dedicate her life to public service. Her extensive talents have allowed her to write and teach as well as provide services to protect the safety of and prevent harm to mothers, children and families.

Dr. Schloesser's work in the public health arena began in Kansas in 1952. Her position as a pediatric consultant to the Division of Maternal and Child Health (MCH) of the Kansas Department of Health and Environment (KDHE) allowed her to shape the course of health services for mothers and children. With a combination of what she called "desk work and clinical work," Dr. Schloesser was able to establish herself as a heroine of mothers and children. She continued



*Dr. Schloesser*

with KDHE as Director of the MCH Division, Medical Director of MCH Programs, Director of the Division of Health, as well as the Deputy Director for Federal and State Relations.

Dr. Schloesser became a standard bearer during her tenure with the KDHE. Under her guidance, Kansas reduced its infant mortality significantly. In 1988, the rate fell to an all-time low of 7.9 infant deaths per 1,000 live births. She fostered programs for children with special needs, including newborn screening for inherited diseases. She helped win legislation requiring screening for vision and hearing problems and immunizations for Kansas' school children.

During her employment with the State, Dr. Schloesser also developed and implemented community family planning services, maternity and infant care projects. She coined the now-familiar term "Healthy Start" in Senate testimony requested by Bob Dole and established home visitation programs for mothers with newborn children. She challenged the system and established community programs for educational, developmental and social services.

Her talents have had international impact. Dr. Schloesser's work in East Africa established her as a leader in the maternal and child health arena. She worked with a team of physicians and hired staff in Uganda to improve the general health of families and children. "The people of Uganda were much like those in Kansas in that both de-

\*KMS Director of Communications



sired to have large families," Dr. Schloesser remarked. "The only problem was that the children were continually dying. With a physician team from the School of Public Health at Berkeley, I traveled to Africa to establish family planning and child health clinics." Dr. Schloesser's time spent overseas from 1971 to 1974 allowed her to nurture MCH programs outside the United States while giving her the opportunity to share the ad-

## An outstanding contribution to maternal and child health.

vances Americans had enjoyed in the maternal and child health arena.

Dr. Schloesser alerted the medical community to the need for standards in child care. "We have a good law in Kansas [regarding child health care] but changes needed to be made all over the country," she observed. She implemented sweeping health and safety standards in Kansas for out-of-home child care which have become models for states all over America. She served on the Child Abuse Technical Panel of the APHA/American Academy of Pediatrics (AAP) Child Care Project, which produced the first national health and safety performance standards for out-of-home child care. Additionally, Dr. Schloesser has traveled to Colorado and Iowa to test the APHA/AAP standards, and has served as a consultant to the Maternal and Child Health Bureau of the Ohio Department of Health and Human Services.

Dr. Schloesser is a unique personification of dedicated talent. Perhaps the Kansas Coalition for Children characterized her best: "Patricia Turk Schloesser, M.D., F.A.A.P., is a Public Health Pediatrician, wife of a physician, and mother of five. For more than three decades, she has shaped the course of public health services for mothers and children in Kansas." The Kansas Medical Society salutes the achievement of this tireless warrior in the public health arena.

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Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it; however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

**Indications:** Yocon<sup>®</sup> is indicated as a sympatholytic and mydriatic. It may have activity as an aphrodisiac.

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**Warning:** Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

**Adverse Reactions:** Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.<sup>1,2</sup> Also dizziness, headache, skin flushing reported when used orally.<sup>1,3</sup>

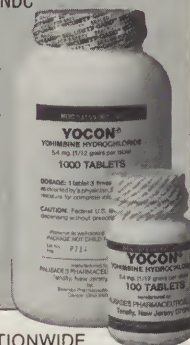
**Dosage and Administration:** Experimental dosage reported in treatment of erectile impotence.<sup>1,3,4</sup> 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to 1/2 tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.<sup>3</sup>

**How Supplied:** Oral tablets of Yocon<sup>®</sup> 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.

### References:

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# Prolonged QT Interval and 2:1 Atrioventricular Block

CYNTHIA E. BATTISTE, M.D.,\* *Wichita*

**T**wo cases of 2:1 atrioventricular block (AVB) with prolonged QT interval in newborns are presented, and the literature is reviewed.

## Case Reports

*Case 1:* A 2611-gm, 38-week-gestation male was born to a 24-year-old gravida 3, para 2 female by unscheduled C-section after transfer for fetal bradycardia. Bradycardia was first noted during the fourth month of pregnancy. However, on three subsequent obstetrical evaluations the fetal heart rate was normal. Apgars were 7/8/10.

On physical examination the patient was acyanotic. Pulse was 53 beats/minute. Respirations were 47/minute. Blood pressure was 55/25. Lungs were clear. The precordium was quiet. S<sub>1</sub> and S<sub>2</sub> were normal. There was a grade 1-2/6 systolic murmur auscultated along the left sternal border. There was no hepatomegaly. Pulses were normal. The rest of the physical examination was unremarkable.

Electrocardiogram (Figure 1) and 24-hour Holter demonstrated 2:1 AVB and a prolonged QT interval. Corrected QT was 0.62 seconds. Echocardiogram demonstrated a small left-to-right ductal shunt, a small left-to-right shunt across the muscular ventricular septum, and a normal left ventricular ejection fraction of 0.62. Serum ionized calcium, serum magnesium, and T<sub>4</sub> were normal. Brainstem auditory-evoked response was normal. Parents' EKGs were normal. EKGs on siblings were requested but not obtained.

A permanent ventricular epicardial pacemaker was placed at one week of age. The patient developed brief intermittent ventricular tachycardia coming out of the anesthesia for the procedure. It was controlled with intravenous lidocaine. He

was placed on oral propranolol 1 mg/kg/day divided into four doses. He was discharged at 14 days of age. A week after discharge he had a cardiac arrest and was taken to a local emergency room, but could not be resuscitated.

*Case 2:* A 2392-gm, 33-week-gestation male was born to a 29-year-old gravida 2, para 0 female by unscheduled C-section for fetal distress after the onset of premature labor. Apgars were 8/8/8. He was intubated at 1 minute because of a persistent heart rate of less than 100 beats/minute. Hydrocephalus, hydronephrosis, an intra-abdominal mass, and a small thoracic volume were detected prior to delivery.

On physical examination, he had a full anterior fontanelle with spreading of the sutures. He had micro-ophthalmos, bilateral flank masses, syndactyly of all four extremities, and an undescended right testicle. The pulse was 70 beats/minute. The rest of the examination was normal.

Chest x-ray demonstrated mild-to-moderate cardiomegaly, a hypoplastic chest, and decreased aeration of the entire left lung. EKG (Figure 2) showed 2:1 AVB and prolonged QT interval with a corrected QT of 0.6 seconds. Echocardiogram revealed a patent ductus arteriosus, mild tricuspid insufficiency, marked right ventricular hypertrophy, mild left ventricular hypertrophy, a left-to-right shunt across a patent foramen ovale, and an elevated right ventricular systolic time interval at 0.59. Chromosomes were 46, XY. Serum sodium, potassium, and ionized calcium were normal. Abdominal x-ray revealed a calcified mass in the right lower quadrant suggesting meconium peritonitis. Abdominal ultrasound showed bilateral hydronephrosis without dilation of the ureters.

The patient became progressively mottled and cyanotic with worsening arterial blood gases. After a conference with the parents, the ventilator was discontinued on the second day of life, and he subsequently died.

Autopsy demonstrated severe old cystic encephalomalacia involving the left hemisphere, bilateral severe gliosis of the basal ganglia, and

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Send correspondence to Dr. Battiste at 1010 N. Kansas, Wichita, Kansas 67214-3199.

Acknowledgment: These newborns were cared for in the Newborn Intensive Care Unit at HCA Wesley Medical Center in Wichita.



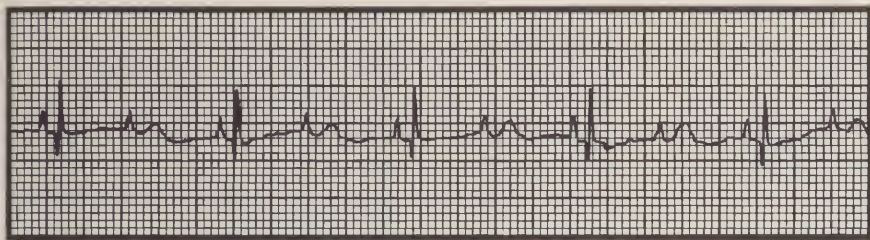


Figure 1. Lead II. 2:1 atrio-ventricular block with corrected QT of 0.62 seconds.

marked periventricular gliosis involving the right hemisphere. Duodenal atresia, proximal jejunal atresia, and dilated renal calices were also demonstrated.

### Discussion

In a review of the literature,<sup>1-9</sup> fourteen cases of 2:1 AVB associated with the long QT interval have been reported (see table). The case reported by Presbitero et al.<sup>6</sup> was noted to have a heart rate of 50 beats/minute at 16 weeks of gestation. Our first case was also noted to have intermittent bradycardia during the fourth month of pregnancy. Two of the other reported cases also were detected in utero,<sup>2,9</sup> four were noted at birth,<sup>4,7,8</sup> one was detected at one day of age,<sup>4</sup> and one at two days of age.<sup>4</sup>

At the time of the reports, only three of the nine reported patients diagnosed by two days of age were alive. One,<sup>9</sup> who received a pacemaker and propranolol, was reported as doing well at age six months. Another living patient<sup>4</sup> also received a pacemaker and propranolol and was alive at 1.5 years. Kugler and Danford<sup>7</sup> reported a patient detected at birth who was alive at 12 years of age. However, their patient did not receive a pacemaker until age 4 years and was not started on propranolol until age 11 years. Scott et al.<sup>4</sup> had patients die at age 2 years and 3.8 years with pacemakers. However, one had had propranolol discontinued by the parents two years before sudden death. The other patient was followed elsewhere and may not have been continued on pro-

pranolol. Our first case also died in spite of receiving a pacemaker and propranolol.

The five cases detected from 2.5 years to 24 years<sup>1,3,5,7</sup> were all alive at the time of report. Four of these patients ultimately had pacemakers implanted, but one did not receive a pacemaker until 24 years of age.<sup>5</sup> Therefore, the effectiveness of treatment is unclear. Rather, it seems as if an early age of detection carries an ominous prognosis with a mortality of 73% (8 of 11 deaths, including our 2 cases). Not all of the reports indicate the corrected QT intervals. The two living patients reported by Kugler and Danford<sup>7</sup> had corrected QT intervals of 0.55 seconds and 0.46 seconds. Perhaps patients with longer corrected QT intervals (i.e.,  $\geq 0.6$  seconds) have a worse prognosis.

Scott et al.<sup>4</sup> demonstrated that 2:1 AVB with prolonged QT interval is more likely to occur in newborns. Their sinus impulses with short cycle lengths are blocked because of the long ventricular effective refractory period that occurs with the long QT syndrome. Also, the ventricular bradycardia that occurs with heart block in the presence of the long QT syndrome increases the ventricular vulnerable period and the possibility of developing ventricular tachycardia or fibrillation. Van Hare et al.<sup>8</sup> demonstrated that during 2:1 conduction, AVB occurred distal to the His-bundle recording in one of their patients with prolonged QT interval. They concluded that the AVB in both their patients was functional, resulting from the interaction of ventricular rate, action potential duration, and His-Purkinje system refractoriness.

Presbitero et al.<sup>6</sup> questioned the theory that congenital long QT syndrome is caused by a discrepancy between right and left sympathetic ganglia, since bradycardia occurred in their case at 16 weeks of gestation when sympathetic fibers just begin to appear. They proposed that the anomaly may be caused by a disorder of intrinsic properties of myocardial cells.

There is also the question of whether the 2:1 AVB could progress to complete AVB. Crawford et al.<sup>10</sup> reported a patient (not included in the table) who presented at 5 years of age with 3:2

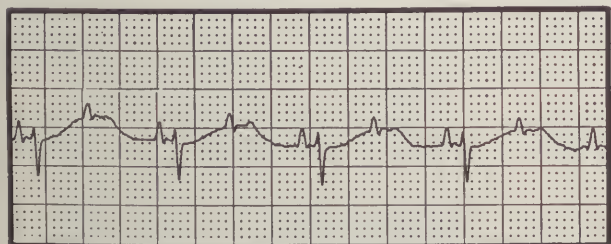


Figure 2. Lead right-sided V3. 2:1 atrioventricular block with corrected QT of 0.60 seconds.

AVB and prolonged QT interval. She progressed to complete AVB at 13 years of age and had had three episodes of ventricular tachycardia by that age. At that time, treatment with a pacemaker and propranolol was instituted. She was asymptomatic at 22 months follow-up.

## Conclusion

In summary, 2:1 AVB with prolonged QT interval has been rarely reported in fetuses and young children. Patients detected before or shortly after birth have a very high mortality rate. This combination could be a potential cause of unexplained

SUMMARY OF REPORTED CASES OF 2:1 AVB WITH PROLONGED QT INTERVAL

	<i>Age at Detection of Block</i>	<i>EKG</i>	<i>Pacemaker</i>	<i>Drug Treatment</i>	<i>Outcome</i>	<i>Age at Follow-up</i>
1. Roy et al. 1976	9 years	2:1 AVB, $\overline{QT}$	yes	propranolol	Alive	9 years 5 mos
2. Southall et al. 1979	in utero at 37 weeks gestation	junctional rhythm, 2:1 AVB, $\overline{QT}$	no	none	Died	11 days
3. Sharma et al. 1981	2.5 years	intermittent 2:1 AVB, $\overline{QT}$	no	phenytoin phenobarbital (seizures)	Alive	not reported
4. Scott et al. 1987	1 day	VT, 2:1 AVB, $\overline{QT}$	yes	propranolol (? discontinued)	Died	2 years
	2 days	2:1 AVB, $\overline{QT}$	yes	propranolol (discontinued by parents)	Died	3.8 years
	birth	2°AVB, 1°AVB, VT, $\overline{QT}$	yes	propranolol	Alive	1.5 years
5. Eldar et al. 1987	*19 years	AVB-II, $\overline{QT}$	yes	propranolol phenytoin	Alive	19 years
	24 years	sinus bradycardia, AVB-II, $\overline{QT}$	yes	phenytoin beta-blockers	Alive	27 years
6. Presbitero et al. 1989	16 weeks gestation	2:1 AVB, $\overline{QT}$	refused	propranolol	Died	7 days
7. Kugler and Danford 1989	birth	2°AVB, $\overline{QT}$	yes	propranolol	Alive	12 years
	13 years	2°AVB, $\overline{QT}$	yes	propranolol	Alive	14 years
8. Van Hare et al. 1990	birth	intermittent 2°AVB, $\overline{QT}$	refused	propranolol	Died (VF)	28 months
	birth	2:1 AVB, $\overline{QT}$ , VT, multiform PVCs	yes	propranolol	Alive	6 months
9. Weintraub et al. 1990	34 weeks gestation	2:1 AVB, $\overline{QT}$	no	propranolol	Died	6 months

\* Patient had left cervicothoracic sympathectomy.



fetal death. Currently, the use of propranolol with a permanent pacemaker is recommended. However, this combination of therapy may not always prevent sudden death.

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#### 4 A.M.

*The fire is out, the ash gone gray —  
Night chill bites the bone.  
The hopes day had have slipped away  
Like day's bright waters gone.*

*A child lies ill, his belly sore  
From something — God knows what —  
The stars shine dimmer than before,  
The eyes of God seem shut.*

*Yet in this endless emptiness  
An early robin sings  
Whose clear and unfeigned happiness  
Disdains all darkenings.*

George S. Bascom, M.D., Manhattan

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# Perinatal Transmission of Hepatitis B in Kansas

**A**cute infection with hepatitis B affects 200,000 to 300,000 Americans every year. There are an estimated one million chronic carriers of the disease in this country. The risk of becoming a carrier is directly related to the age at which a person is infected. Up to 70 percent of infants born to infected mothers will become carriers if untreated. Although carriers may remain asymptomatic for prolonged periods, it is estimated that approximately one quarter of infants who become carriers will eventually die of the long-term complications of infection (i.e., chronic liver disease or hepatocellular carcinoma).

In order to prevent perinatal transmission of hepatitis B, the Centers for Disease Control and Prevention recommends that all pregnant women be screened for hepatitis B surface antigen (HBsAg) during pregnancy. Preliminary results of a 1992 survey of prenatal screening practices in Kansas indicate that only 83% of pregnant women are currently screened for hepatitis B.

The following case reports illustrate the consequences of failing to screen.

## Case 1

A 29-year-old Chinese immigrant received prena-

tal care in Kansas in 1989. She delivered a female infant who was found to be infected with hepatitis B at 11 months of age. The mother was then tested; she was a hepatitis B carrier who had not been screened during pregnancy.

## Case 2

A 32-year-old white female delivered her third child in 1990. At 20 months of age, the child was found to be infected with hepatitis B. The mother was screened for HBsAg during pregnancy and found to be positive, but the infant received no prophylactic treatment after delivery. Subsequent testing showed that the mother's other two children, an 8-year-old and a 3-year-old, were also infected. The mother received prenatal care for her first two children in another state. Prenatal records for these pregnancies were not available for review. However, it is likely that these two children were also infected at birth.

Infants born to mothers who are infected with hepatitis B need to be given vaccine and hepatitis B immune globulin (HBIG) within 12 hours of birth. The second and third doses of vaccine are then given 1 and 6 months later (Table 1). Infants born to mothers who were not screened for

TABLE 1  
RECOMMENDED SCHEDULE OF HEPATITIS B IMMUNOPROPHYLAXIS TO PREVENT PERINATAL TRANSMISSION OF HEPATITIS B INFECTION

<i>Vaccine dose*</i>	<i>Age of infant</i>
Infant born to mother known to be HBsAg positive:	
First	Birth (within 12 hours)
HBIG	Birth (within 12 hours)
Second	1 month
Third	6 months **
Infant born to mother not screened for HBsAg:	
First	Birth (within 12 hours)
HBIG	If mother is found to be HBsAg positive, administer dose to infant as soon as possible, not later than 1 week after birth.
Second	1-2 months ***
Third	6 months **

\* The vaccine dose for infants varies with the hepatitis B status of the mother and the vaccine manufacturer.

\*\* A four-dose schedule has been approved for one manufacturer of vaccine. If used, the third dose is administered at 2 months of age and the fourth dose at 12-18 months of age.

\*\*\* Infants of women who are HBsAg negative should finish the vaccine series. The second dose may be given at 2 months of age.



HBsAg during pregnancy should be vaccinated within 12 hours of birth. The mother should then be tested for HBsAg as soon as possible; if she is found to be positive, the infant should receive a dose of HBIG not later than one week after birth. If the mother is HBsAg negative, the infant should still finish the vaccine series (Table 1). The proper use of vaccine and HBIG will protect approximately 90% of infants born to infected mothers.

The Immunization Section in the Bureau of Disease Control provides vaccine and HBIG at no charge to infants born to mothers infected with HBsAg. Vaccine is also available at no charge for household members and sexual contacts of infected women who are pregnant. Requests for vaccine and HBIG can be made through the local health department or by contacting Ruth Humbert in the Bureau of Disease Control at 913-296-2885. Complete recommendations from the Centers for Disease Control and Prevention for preventing perinatal transmission of hepatitis B were published in the *Morbidity and Mortality Weekly Report*, November 22, 1991, vol. 40, no. RR-13.

Reported by: Immunization Section, Bureau of Disease Control, Kansas Department of Health and Environment.



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# Limits of APTT for Monitoring Heparin

DONALD L. VINE, M.D.,\* *Wichita*

It is well known and accepted that the "proper" dose of heparin can be maintained by keeping the activated partial thromboplastin time (APTT) ratio between 1.5 and 2.0 or 2.5 times control. Unfortunately, the assumptions surrounding the clinical practice have become obscured and should probably be reviewed.

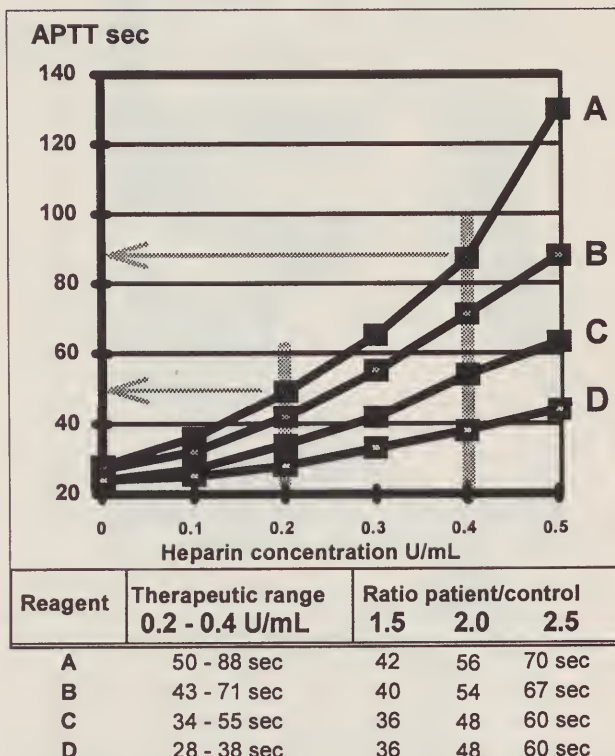
## APTT

Jack Hirsh recently reviewed heparin for the Drug Therapy section of the *New England Journal of Medicine*.<sup>1</sup> He argues clearly that the ratio of the patient's APTT to that of a control value is not appropriate for unqualified clinical use.

Thromboplastins used as reagents for the measurement of the APTT are commercial products with varied responsiveness. This variation can be quantified by measuring the APTT of plasma samples containing known concentrations of heparin and plotting the resulting APTT values vs. the heparin concentrations. According to Hirsh, important studies defining the therapeutic range of APTT ratios as ranging between 1.5 and 2.5 used reagents for which this therapeutic range was equivalent to in vitro levels of heparin of 0.2 to 0.4 units per millimeter by protamine titration. When different reagents are used, these ratios no longer apply.

The protamine titration curves of four commercially available reagents are plotted in the figure. Assume that these represent the values obtained from hospitals A, B, C and D. The vertical gray bars represent the 0.2 to 0.4 units heparin per millimeter therapeutic range. The horizontal gray arrows delimit the therapeutic APTT range for hospital A in seconds.

The table provides the therapeutic APTT ranges using the heparin titration curves and the APTTs associated with various APTT ratios. The therapeutic APT times for hospital A (50 to 88 seconds) do not even overlap with those for hos-



Courtesy of Dwight Oxley, M.D. 6/92

pital D (28 to 38 seconds). In this example, a patient receiving 5,000 units of heparin could have two markedly different APTT values, depending upon which hospital performed the test.


Furthermore, the curves have different slopes, intercepts and shapes, which means that traditional APTT ratios will not exactly match the therapeutic ranges and may lead to over- or under-anticoagulation merely because the curves are not linear. In the table, for example, APTT ratios of 1.5, 2.0 and 2.5 correspond to identical APT times for hospitals C and D, but the therapeutic ranges differ and the ratios would lead to over-anticoagulation at hospital D.

## Heparin Nomograms

The value of a nomogram is the observation that patients treated using such a device will have more APTT determinations within a *specified range of*

\*Associate Professor, Department of Medicine, University of Kansas School of Medicine-Wichita

Address correspondence to Dr. Vine, Department of Medicine, UKSM-W, 1010 N. Kansas, Wichita, KS 67214.



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APTT values than patients who are treated without its use.<sup>2</sup> A nomogram, of itself, does not guarantee that the APTT values will be *therapeutic*.

Hirsh recommends that heparin nomograms be based upon protamine titration curves using the reagent which the hospital clinical laboratory employs for APTT determinations, and that therapeutic ranges be expressed in seconds rather than ratios.

Curve C represents the curve for the reagents currently in use at HCA Wesley Medical Center in Wichita. The therapeutic APTT range predicted for heparin levels of 0.2 to 0.4 is 34 to 55 seconds. *Serendipity results in the ratios of 1.5 to 2.5 being similar to the therapeutic values predicted by the heparin titration curve.* Heparin nomograms for individual institutional use should be calibrated to the reagents used to perform the APTT at each institution wishing to develop such nomograms.

Hirsh acknowledges shortcomings of using heparin titration curves for monitoring heparin therapy. In their favor are clinical efficacy studies and standardization of institutional practice, which can be monitored and changed when necessary.

The alternative is to continue using familiar, comforting ratios that may not reflect the responsiveness of the APTT reagents used in every laboratory.

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1. Hirsh J. Heparin. *N Engl J Med* 1991;324:1565.
2. Cruickshank MK, et al. A standard heparin nomogram for the management of heparin therapy. *Arch Intern Med* 1991;151:333.



# KANSAS MEDICINE

The Journal Of The Kansas Medical Society

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KANSAS MEDICINE expresses appreciation for the assistance of the following physicians who served as Consulting Editors for scientific papers published during 1992.

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Re: KMS Services endorsed Member Retirement System

Dear Kansas Medical Society Member:

In our endeavors at KMS Services, Inc. to provide useful and desired services to the KMS membership we have spent the better part of the last eighteen months developing and evaluating a new service called the Member Retirement System offered by Corporate Consulting Group, Inc. This program has undergone stringent review by the KMS Services, Inc. executive committee, outside legal counsel and the Kansas Medical Society Executive Committee and we are very pleased with the outcome of our efforts.

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This program is extremely complete in its services. Therefore, it is not possible to fully discuss the merits in this introduction. The representatives from Corporate Consulting Group, Inc. will be contacting all Kansas Medical Society members to fully discuss the program's merits and provide a review of your current service providers.

It is my hope that you will extend an opportunity to Corporate Consulting Group, Inc. to provide a complete review of your current services in contrast to the KMS Services, Inc.'s Member Retirement System.

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Hypersensitivity to any component of this medication.

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**Pregnancy and lactation.** Atherosclerosis is a chronic process and discontinuation of lipid-lowering drugs during pregnancy should have little impact on the outcome of long-term therapy of primary hypercholesterolemia. Cholesterol and other products of cholesterol biosynthesis are essential components for fetal development (including synthesis of steroids and cell membranes). Since HMG-CoA reductase inhibitors decrease cholesterol synthesis and possibly the synthesis of other biologically active substances derived from cholesterol, they may cause fetal harm when administered to pregnant women. Therefore, HMG-CoA reductase inhibitors are contraindicated during pregnancy and in nursing mothers. **Pravastatin should be administered to women of child-bearing age only when such patients are highly unlikely to conceive and have been informed of the potential hazards.** If the patient becomes pregnant while taking this class of drug, therapy should be discontinued and the patient apprised of the potential hazard to the fetus.

### WARNINGS

**Liver Enzymes:** HMG-CoA reductase inhibitors, like some other lipid-lowering therapies, have been associated with biochemical abnormalities of liver function. Increases of serum transaminase (ALT, AST) values to more than 3 times the upper limit of normal occurring on 2 or more (not necessarily sequential) occasions have been reported in 1.3% of patients treated with pravastatin in the U.S. over an average period of 18 months. These abnormalities were not associated with cholestasis and did not appear to be related to treatment duration. In those patients in whom these abnormalities were believed to be related to pravastatin and who were discontinued from therapy, the transaminase levels usually fell slowly to pretreatment levels. These biochemical findings are usually asymptomatic although worldwide experience indicates that anorexia, weakness, and/or abdominal pain may also be present in rare patients.

As with other lipid-lowering agents, liver function tests should be performed during therapy with pravastatin. Serum aminotransferases, including ALT (SGPT), should be monitored before treatment begins, every six weeks for the first three months, every eight weeks during the remainder of the first year, and periodically thereafter (e.g., at about six-month intervals). Special attention should be given to patients who develop increased transaminase levels. Liver function tests should be repeated to confirm an elevation and subsequently monitored at more frequent intervals. If increases in AST and ALT equal or exceed three times the upper limit of normal and persist, then therapy should be discontinued. Persistence of significant aminotransferase elevations following discontinuation of therapy may warrant consideration of liver biopsy.

Active liver disease or unexplained transaminase elevations are contraindications to the use of pravastatin (see CONTRAINDICATIONS). Caution should be exercised when pravastatin is administered to patients with a history of liver disease or heavy alcohol ingestion (see CLINICAL PHARMACOLOGY: Pharmacokinetics/Metabolism). Such patients should be closely monitored, started at the lower end of the recommended dosing range, and titrated to the desired therapeutic effect.

**Skeletal Muscle: Rhabdomyolysis with renal dysfunction secondary to myoglobinuria has been reported with pravastatin and other drugs in this class.** Uncomplicated myalgia has also been reported in pravastatin-treated patients (see ADVERSE REACTIONS). Myopathy, defined as muscle aching or muscle weakness in conjunction with increases in creatine phosphokinase (CPK) values to greater than 10 times the upper limit of normal was reported to be possibly due to pravastatin in only one patient in clinical trials (<0.1%). Myopathy should be considered in any patient with diffuse myalgias, muscle tenderness or weakness, and/or marked elevation of CPK. Patients should be advised to report promptly unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever. **Pravastatin therapy should be discontinued if markedly elevated CPK levels occur or myopathy is diagnosed or suspected. Pravastatin therapy should also be temporarily withheld in any patient experiencing an acute or serious condition predisposing to the development of renal failure secondary to rhabdomyolysis, e.g., sepsis; hypotension; major surgery; trauma; severe metabolic, endocrine, or electrolyte disorders; or uncontrolled epilepsy.**

The risk of myopathy during treatment with lovastatin is increased if therapy with either cyclosporine, gemfibrozil, erythromycin, or niacin is administered concurrently. There is no experience with the use of pravastatin together with cyclosporine. Myopathy has not been observed in clinical trials involving small numbers of patients who were treated with pravastatin together with niacin. One trial of limited size involving combined therapy with pravastatin and gemfibrozil showed a trend toward more frequent CPK elevations and patient withdrawals due to musculoskeletal symptoms in the group receiving combined treatment as compared with the groups receiving placebo, gemfibrozil, or pravastatin monotherapy. Myopathy was not reported in this trial (see PRECAUTIONS: Drug Interactions). One patient developed myopathy when clofibrate was added to a previously well tolerated regimen of pravastatin; the myopathy resolved when clofibrate therapy was stopped and pravastatin treatment continued. **The use of fibrates alone may occasionally be associated with myopathy. The combined use of pravastatin and fibrates should generally be avoided.**

### PRECAUTIONS

**General:** Pravastatin may elevate creatine phosphokinase and transaminase levels (see ADVERSE REACTIONS). This should be considered in the differential diagnosis of chest pain in a patient on therapy with pravastatin.

**Homozygous Familial Hypercholesterolemia.** Pravastatin has not been evaluated in patients with rare homozygous familial hypercholesterolemia. In this group of patients, it has been reported that HMG-CoA reductase inhibitors are less effective because the patients lack functional LDL receptors.

**Renal Insufficiency.** A single 20 mg oral dose of pravastatin was administered to 24 patients with varying degrees of renal impairment (as determined by creatinine clearance). No effect was observed on the pharmacokinetics of pravastatin or its 3 $\alpha$ -hydroxy isomeric metabolite (SQ 31,906). A small increase was seen in mean AUC values and half-life (t<sub>1/2</sub>) for the inactive enzymatic ring hydroxylation metabolite (SQ 31,945). Given this small sample size, the dosage administered, and the degree of individual variability, patients with renal impairment who are receiving pravastatin should be closely monitored.

**Information for Patients:** Patients should be advised to report promptly unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever.

**Drug Interactions:** Immunosuppressive Drugs, Gemfibrozil, Niacin (Nicotinic Acid), Erythromycin: See WARNINGS: Skeletal Muscle.

**Antipyrine:** Clearance by the cytochrome P450 system was unaltered by concomitant administration of pravastatin. Since pravastatin does not appear to induce hepatic drug-metabolizing enzymes, it is not expected that any significant interaction of pravastatin with other drugs (e.g., phenytoin, quinidine) metabolized by the cytochrome P450 system will occur.

**Cholestyramine/Colestipol:** Concomitant administration resulted in an approximately 40 to 50% decrease in the mean AUC of pravastatin. However, when pravastatin was administered 1 hour before or 4 hours after cholestyramine or 1 hour before colestipol and a standard meal, there was no clinically significant decrease in bioavailability or therapeutic effect. (See DOSAGE AND ADMINISTRATION: Concomitant Therapy.)

**Warfarin:** In a study involving 10 healthy male subjects given pravastatin and warfarin concomitantly for 6 days, bioavailability parameters at steady state for pravastatin (parent compound) were not altered. Pravastatin did not alter the plasma protein-binding of warfarin. Concomitant dosing did increase the AUC and C<sub>max</sub> of warfarin but did not produce any changes in its anticoagulant action (i.e., no increase was seen in mean prothrombin time after 6 days of concomitant therapy). However, bleeding and extreme prolongation of prothrombin time has been reported with another drug in this class. Patients receiving warfarin-type anticoagulants should have their prothrombin times closely monitored when pravastatin is initiated or the dosage of pravastatin is changed.

**Cimetidine:** The AUC<sub>0-12h</sub> for pravastatin when given with cimetidine was not significantly different from the AUC for pravastatin when given alone. A significant difference was observed between the AUC's for pravastatin when given with cimetidine compared to when administered with antacid.

**Digoxin:** In a crossover trial involving 18 healthy male subjects given pravastatin and digoxin concurrently for 9 days, the bioavailability parameters of digoxin were not affected. The AUC of pravastatin tended to increase, but the overall bioavailability of pravastatin plus its metabolites SQ 31,906 and SQ 31,945 was not altered.

**Gemfibrozil:** In a crossover study in 20 healthy male volunteers given concomitant single doses of pravastatin and gemfibrozil, there was a significant decrease in urinary excretion and protein binding of pravastatin. In addition, there was a significant increase in AUC, C<sub>max</sub>, and T<sub>max</sub> for the pravastatin metabolite SQ 31,906. Combination therapy with pravastatin and gemfibrozil is generally not recommended.

In interaction studies with aspirin, antacids (1 hour prior to FRAVACHOL), cimetidine, nicotinic acid, or probucol, no statistically significant differences in bioavailability were seen when FRAVACHOL (pravastatin sodium) was administered.

**Other Drugs:** During clinical trials, no noticeable drug interactions were reported when FRAVACHOL was added to: diuretics, antihypertensives, digitalis, converting-enzyme inhibitors, calcium channel blockers, beta-blockers, or nitroglycerin.

**Endocrine Factors:** HMG-CoA reductase inhibitors interfere with cholesterol synthesis and lower circulating cholesterol levels and, as such, might theoretically blunt adrenal or gonadal steroid hormone production. Results of clinical trials with pravastatin in males and post-menopausal females were inconsistent with regard to possible effects of the drug on basal steroid hormone levels. In a study of 21 males, the mean testosterone response to human chorionic gonadotropin was significantly reduced (p<0.004) after 16 weeks of treatment with 40 mg of pravastatin. However, the percentage of patients showing a  $\geq 50\%$  rise in plasma testosterone after human chorionic gonadotropin stimulation did not change significantly after therapy in these patients. The effects of HMG-CoA reductase inhibitors on spermatogenesis and fertility have not been studied in adequate numbers of patients. The effects, if any, of pravastatin on the pituitary-gonadal axis in pre-menopausal females are unknown. Patients treated with pravastatin who display clinical evidence of endocrine dysfunction should be evaluated appropriately. Caution should also be exercised if an HMG-CoA reductase inhibitor or other agent used to lower cholesterol levels is administered to patients also receiving other drugs (e.g., ketoconazole, spironolactone, or other agents) that may diminish the levels or activity of steroid hormones.

**CNS Toxicity:** CNS vascular lesions, characterized by perivascular hemorrhage and edema and mononuclear cell infiltration of perivascular spaces, were seen in dogs treated with pravastatin at a dose of 25 mg/kg/day, a dose that produced a plasma drug level about 50 times higher than the mean drug level in humans taking 40 mg/day. Similar CNS vascular lesions have been observed with several other drugs in this class.

A chemically similar drug in this class produced optic nerve degeneration (Wallerian degeneration of retinogeniculate fibers) in clinically normal dogs in a dose-dependent fashion starting at 60 mg/kg/day, a dose that produced mean plasma drug levels about 30 times higher than the mean drug level in humans taking the highest recommended dose (as measured by total enzyme inhibitory activity). This same drug also produced vestibulocochlear Wallerian-like degeneration and retinal ganglion cell chromatolysis in dogs treated for 14 weeks at 180 mg/kg/day, a dose which resulted in a mean plasma drug level similar to that seen with the 60 mg/kg dose. **Carcinogenesis, Mutagenesis, Impairment of Fertility:** In a 2-year study in rats fed pravastatin at doses of 0, 30, or 100 mg/kg body weight, there was an increased incidence of hepatocellular carcinomas in males at the highest dose (p<0.01). Although rats were given up to 125 times the human dose (HD) on a mg/kg body weight basis, their serum drug levels were only 6 to 10 times higher than those measured in humans given 40 mg pravastatin as measured by AUC.

The oral administration of 10, 30, or 100 mg/kg (producing plasma drug levels approximately 0.5 to 5.0 times human drug levels at 40 mg) of pravastatin to mice for 22 months resulted in a statistically significant increase in the incidence of malignant lymphomas in treated females when all treatment groups were pooled and compared to controls (p<0.05). The incidence was not dose-related and male mice were not affected.

A chemically similar drug in this class was administered to mice for 72 weeks at 25, 100, and 400 mg/kg body weight, which resulted in mean serum drug levels approximately 3, 15, and 33 times higher than the mean human serum drug concentration (as total inhibitory activity) after a 40 mg oral dose. Liver carcinomas were significantly increased in high-dose females and mid- and high-dose males, with a maximum incidence of 30 percent in males. The incidence of adenomas of the liver was significantly increased in mid- and high-dose females. Drug treatment also significantly increased the incidence of lung adenomas in mid- and high-dose males and females. Adenomas of the eye Harderian gland (a gland of the eye of rodents) were significantly higher in high-dose mice than in controls.

No evidence of mutagenicity was observed *in vitro*, with or without rat-liver metabolic activation, in the following studies: microbial mutagen tests, using mutant strains of *Salmonella typhimurium* or *Escherichia coli*; a forward mutation assay in L5178Y TK + / - mouse lymphoma cells; a chromosomal aberration test in hamster cells; and a gene conversion assay using *Saccharomyces cerevisiae*. In addition, there was no evidence of mutagenicity in either a dominant lethal test in mice or a micronucleus test in mice.

In a study in rats, with daily doses up to 500 mg/kg, pravastatin did not produce any adverse effects on fertility or general reproductive performance. However, in a study with another HMG-CoA reductase inhibitor, there was decreased fertility in male rats treated for 34 weeks at 25 mg/kg body weight, although this effect was not observed in a subsequent fertility study when this same dose was administered for 11 weeks (the entire cycle of spermatogenesis, including epididymal maturation). In rats treated with this same reductase inhibitor at 180 mg/kg/day, seminiferous tubule degeneration (necrosis and loss of spermatogenic epithelium) was observed. Although not seen with pravastatin, two similar drugs in this class caused drug-related testicular atrophy, decreased spermatogenesis, spermatocytic degeneration, and giant cell formation in dogs. The clinical significance of these findings is unclear.

**Pregnancy: Pregnancy Category X:** See CONTRAINDICATIONS.

Safety in pregnant women has not been established. Pravastatin was not teratogenic in rats at doses up to 1000 mg/kg daily or in rabbits at doses of up to 50 mg/kg daily. These doses resulted in 20x (rabbit) or 240x (rat) the human exposure based on surface area (mg/meter<sup>2</sup>). However, in studies with another HMG-CoA reductase inhibitor, skeletal malformations were observed in rats and mice. FRAVACHOL (pravastatin sodium) should be administered to women of child-bearing potential only when such patients are highly unlikely to conceive and have been informed of the potential hazards. If the woman becomes pregnant while taking FRAVACHOL (pravastatin sodium), it should be discontinued and the patient advised again as to the potential hazards to the fetus. **Nursing Mothers:** A small amount of pravastatin is excreted in human breast milk. Because of the potential for serious adverse reactions in nursing infants, women taking FRAVACHOL should not nurse (see CONTRAINDICATIONS).

**Pediatric Use:** Safety and effectiveness in individuals less than 18 years old have not been established. Hence, treatment in patients less than 18 years old is not recommended at this time. (See also PRECAUTIONS: General.)

### ADVERSE REACTIONS

Pravastatin is generally well tolerated; adverse reactions have usually been mild and transient. In 4-month long placebo-controlled trials, 1.7% of pravastatin-treated patients and 1.2% of placebo-treated patients were discontinued from treatment because of adverse experiences attributed to study drug therapy; this difference was not statistically significant. In long-term studies, the most common reasons for discontinuation were asymptomatic serum transaminase increases and mild, non-specific gastrointestinal complaints. During clinical trials the overall incidence of adverse events in the elderly was not different from the incidence observed in younger patients.

**Adverse Clinical Events:** All adverse clinical events (regardless of attribution) reported in more than 2% of pravastatin-treated patients in the placebo-controlled trials are identified in the table below, also shown are the percentages of patients in whom these medical events were believed to be related or possibly related to the drug.

Body System/Event	All Events %		Events Attributed to Study Drug %	
	Pravastatin (N=900)	Placebo (N=411)	Pravastatin (N=900)	Placebo (N=411)
Cardiovascular				
Cardiac Chest Pain	4.0	3.4	0.1	0.0
Dermatologic				
Rash	4.0*	1.1	1.3	0.9
Gastrointestinal				
Nausea/Vomiting	7.3	7.1	2.9	3.4
Diarrhea	6.2	5.6	2.0	1.9
Abdominal Pain	5.4	6.9	2.0	3.9
Constipation	4.0	7.1	2.4	5.1
Flatulence	3.3	3.6	2.7	3.4
Heartburn	2.9	1.9	2.0	0.7
General				
Fatigue	3.8	3.4	1.9	1.0
Chest Pain	3.7	1.9	0.3	0.2
Influenza	2.4*	0.7	0.0	0.0
Musculoskeletal				
Localized Pain	10.0	9.0	1.4	1.5
Myalgia	2.7	1.0	0.6	0.0
Nervous System				
Headache	6.2	3.9	1.7*	0.2
Dizziness	3.3	3.2	1.0	0.5
Renal/Genitourinary				
Urinary Abnormality	2.4	2.9	0.7	1.2
Respiratory				
Common Cold	7.0	6.3	0.0	0.0
Rhinitis	4.0	4.1	0.1	0.0
Cough	2.6	1.7	0.1	0.0

\*Statistically significantly different from placebo.

The following effects have been reported with drugs in this class:

**Skeletal:** myopathy, rhabdomyolysis.

**Neurological:** dysfunction of certain cranial nerves (including alteration of taste, impairment of extra-ocular movement, facial paresis), tremor, vertigo, memory loss, paresthesia, peripheral neuropathy, peripheral nerve palsy.

**Hypersensitivity Reactions:** An apparent hypersensitivity syndrome has been reported rarely which has included one or more of the following features: anaphylaxis, angioedema, lupus erythematosus-like syndrome, polymyalgia rheumatica, vasculitis, purpura, thrombocytopenia, leukopenia, hemolytic anemia, positive ANA, ESR increase, arthritis, arthralgia, urticaria, asthenia, photosensitivity, fever, chills, flushing, malaise, dyspnea, toxic epidermal necrolysis, erythema multiforme, including Stevens-Johnson syndrome.

**Gastrointestinal:** pancreatitis, hepatitis, including chronic active hepatitis, cholestatic jaundice, fatty change in liver, and rarely, cirrhosis, fulminant hepatic necrosis, and hepatoma; anorexia, vomiting.

**Reproductive:** gynecomastia, loss of libido, erectile dysfunction.

**Eye:** progression of cataracts (lens opacities), ophthalmoplegia.

**Laboratory Test Abnormalities:** Increases in serum transaminase (ALT, AST) values and CPK have been observed (see WARNINGS).

Transient, asymptomatic eosinophilia has been reported. Eosinophil counts usually returned to normal despite continued therapy. Anemia, thrombocytopenia, and leukopenia have been reported with other HMG-CoA reductase inhibitors.

**Concomitant Therapy:** Pravastatin has been administered concurrently with cholestyramine, colestipol, nicotinic acid, probucol and gemfibrozil. Preliminary data suggest that the addition of either probucol or gemfibrozil to therapy with lovastatin or pravastatin is not associated with greater reduction in LDL-cholesterol than that achieved with lovastatin or pravastatin alone. No adverse reactions unique to the combination or in addition to those previously reported for each drug alone have been reported. Myopathy and rhabdomyolysis (with or without acute renal failure) have been reported when another HMG-CoA reductase inhibitor was used in combination with immunosuppressive drugs, gemfibrozil, erythromycin, or lipid-lowering doses of nicotinic acid. Concomitant therapy with HMG-CoA reductase inhibitors and these agents is generally not recommended. (See WARNINGS: Skeletal Muscle and PRECAUTIONS: Drug Interactions.)

### OVERDOSAGE

There have been no reports of overdoses with pravastatin.

Should an accidental overdose occur, treat symptomatically and institute supportive measures as required.

(J4-422A)

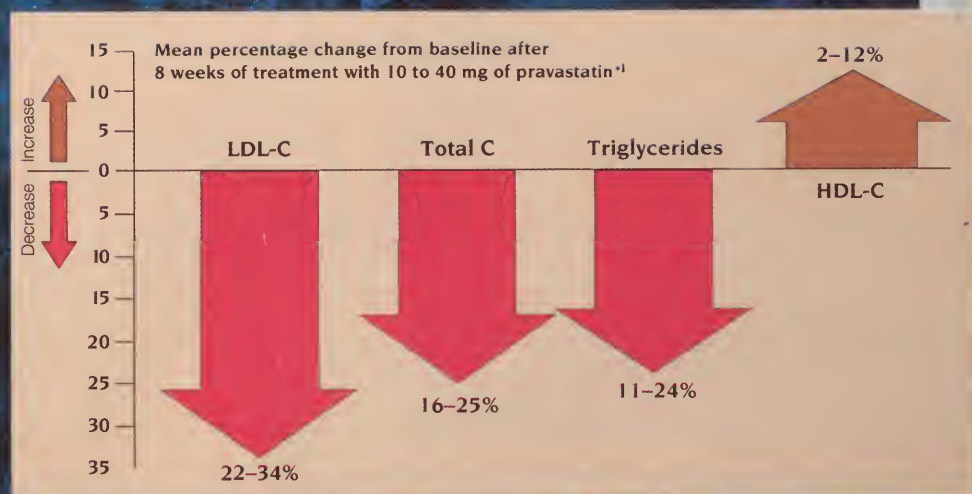






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<sup>\*1</sup>Each arrow represents a range of means derived from a single placebo-controlled study that included 65 patients treated with pravastatin.

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**Reference:** 1. Jones PH, et al. Once-daily pravastatin in patients with primary hypercholesterolemia: a dose-response study. *Clin Cardiol*. 1991;14:146-151.

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# MEDICINE

JOURNAL OF THE KANSAS MEDICAL SOCIETY

February 1993

Volume 94, Number 2



- KMS Position Statements
- Infant Cardiorespiratory Monitor Burn
- Reflex Sympathetic Dystrophy



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**ABOUT OUR LOGO**

In January 1935, a new logo appeared on the cover of KANSAS MEDICINE for the first time. This device represents two stethoscopes: the original monaural type as used by Laennec, and the modern binaural variety. The logo was designed expressly for KANSAS MEDICINE by renowned graphic designer Bradbury Thompson, a native of Topeka and friend of two former editors of the journal, Dr. W.M. Mills and Dr. Lucien Pyle. As another former editor, Dr. Orville R. Clark, wrote in January 1955, the logo "has become as much a part of the journal as any of the features on the inside and is something which is ours alone."

Windmills figure frequently in Jim Hamil's scenes of the Kansas plains, and the one on our cover is appropriately titled "Working Soldiers." These fixtures of rural Kansas life may lack the picturesque forms of their European forebears, but they are capable of all the same functions and use a power source of which Kansas has an abundance: wind. When they could be combined with the other essential to prairie life — water — life must have seemed good, especially if there was enough to provide not just for the people, but for the stock and crops as well.

Witness the pre-windmill circumstances of that life, as recorded in the writings of women settlers. Joanna Stratton wrote in *Pioneer Women*: "On more arid lands, a housewife had to trudge a mile or more to the nearest running stream. Filling huge wooden buckets or barrels, she then made the long haul home again." Another correspondent reported, "A prime need was water in hot weather. . . . The spring, about a half mile or more distant, was the nearest source of good water. Happily, this was clear, cold and of good quality, without tang. Mother began her part in hard labor that endured thereafter almost unremittingly for fifteen years, and that without doubt brought her worn-out to the grave at the age of 58 years. A yoke was made to place across the shoulders, so as to carry at each end a bucket of water, and then water was brought a half mile from spring to house. . . . When ponds near the house contained water after showers, this was dipped up for washing and other purposes, but water to drink and to cook was held to a strict requirement of cleanliness and purity and used from the spring only. . . .

The availability of water in the house followed the sequence of wells and hand pumps to windmills, which assured a supply if the source was sufficient and storage was available. But windmills did not abdicate their place willingly and still survive, continuing to pump water into stock tanks and even, in groups, to generate power — and inspire artists.

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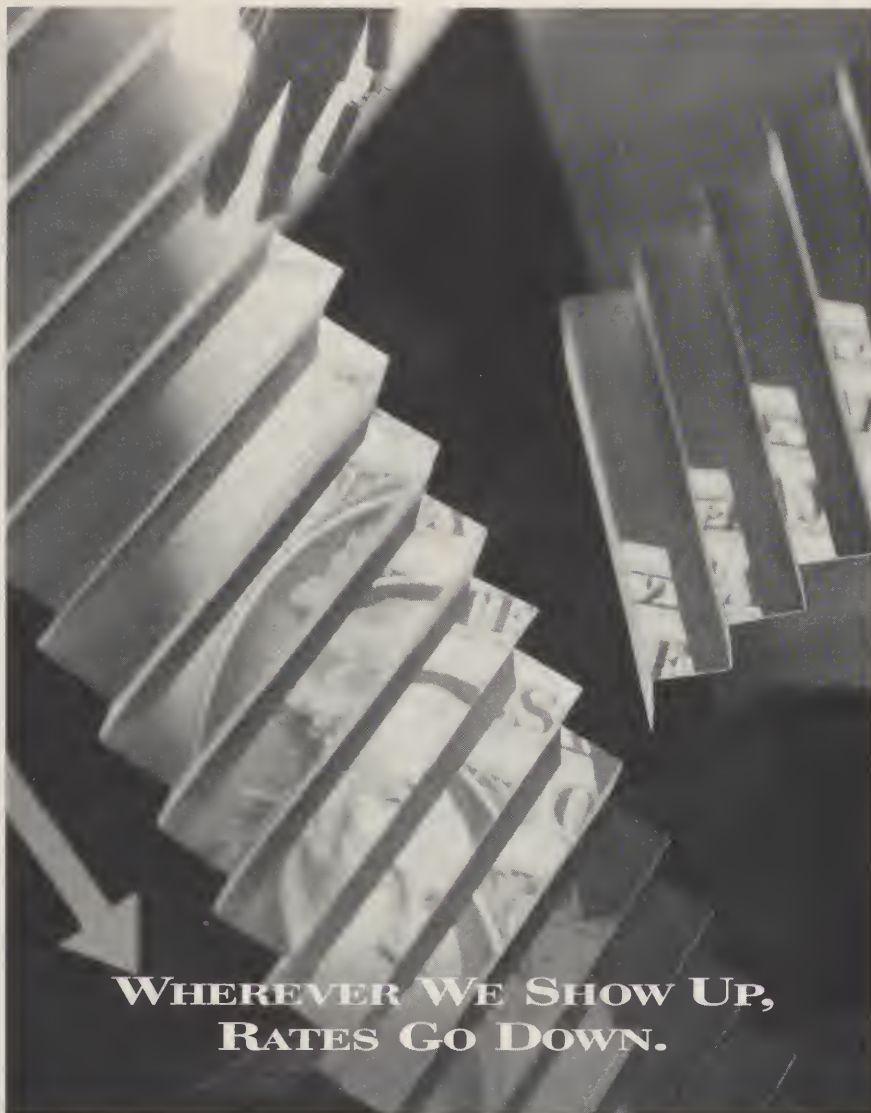
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# Comrades in Abuse

**T**he similarities between infancy and old age have been noted by poets and philosophers — not to mention the caretakers of each. The one is limited by that not yet acquired; the other by the loss of that acquired and more. Another unhappy parallel has emerged in recent times — or gained attention, rather, since it has always been present in some form: their vulnerability to abuse.



There are obvious differences in the forms abuse may take in the two groups. It is easier to recognize the susceptibility of infants and, because they *are* infants, to feel indignation, anger and an urge to punish the perpetrator. It is clearly because of the defenselessness of the child that we recoil. Beside the inhumanity of such treatment, the child's potential is threatened, and life-long damage may bring the child to society for support. Similarly, the elderly may be incapable of complaint — or fear it will bring on more abuse.

But if the elderly pose a comparable problem in their deterioration, their lot has some critical differences. There is nothing attractive about old age. Yes, there are countless programs for uplifting the elderly, but the fact that their members can participate in the first place sets them apart from the far greater number who have survived depleted in mind and body beyond their former capabilities. The changes are often subtle and at some point their behavior, amusingly tolerable at first, becomes burdensome, even impossible to accept in the family pattern of function. This greater number is, one way or another, usually hidden from sight. Periodically, studies emerge describing the plight of this basically nonproductive group. But this is a largely depersonalizing process, and it is easy to detach ourselves from the realities (in part, at least, because the statisticians have subjected us to so many such “studies” since they got their computers).

Infants are expected to thrive, grow and take their places in society. It is tragic if they don't, and every effort to protect them is basically worthy and, callously perhaps, economically desirable. We have all been infants or have had our own — and this adds a special poignancy to reports of child abuse. For the aged, the eventual fate is apparent if unspoken and, for those not

quite there, it is easier to ignore or accept their condition as appropriate to their roles. We are making do for them until their time is served.

Since it emerged as a matter to be recognized and addressed responsibly, abuse of the elderly has come to be recognized in many forms — more, certainly, than can be applied to children. “Abuse” usually connotes physical maltreatment, but it is apparent that while this is probably one of the more compelling features of elder abuse, there are other forms more difficult to distinguish from everyday activity. Age often brings irritability, which stems largely from the subject's realization of the slipping away of former capabilities. This doesn't produce loveable old curmudgeons but cantankerous complainers whose presence usually becomes far different from the earlier expectations of the children who had resolved to care for their parent ad infinitum. Numerous factors may require that the elder be placed under some restrictions or in an environment not to his or her liking — and the line between loving care and abuse becomes fainter (the temptation, at least) as any conscientious offspring in that position can tell you.

Even more hidden from public observation is the matter of economic abuse, the diversion of the elder's resources into forms assigning to the caretakers' control. This can be innocent and proper as long as the responsibilities are carried out appropriately but can be a step toward acceptance of borderline care conditions that are not what the elderly person had in mind in earlier days. In this gray area is the custom of diverting the individual's resources to create a false indigence and then placing the subject on society's care.

Physicians are admonished on the one hand to be alert to signs of abuse in the care of the elderly, but at the same time they are committed to sustaining life to its fullest potential (of length, if not intellect). It is becoming apparent that there is a bordering if not merger of such effects, and we have an interesting problem for the philosophers: social abuse. For example, a degree of abuse perpetrated by society can be read into policies dictating that care shall be provided up to a certain dollar limit and then cut off (to be absorbed presumably by some other source — or the street).

We are in a state of ethical flux and creating dilemmas faster than we can resolve them. D.E.G.

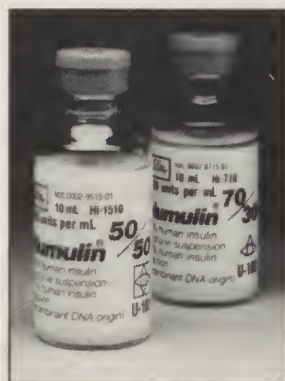




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# Representatives of KMS Visit Washington

**A**t a ceremony in Washington, D.C., on February 2, Senator Bob Dole was awarded the AMA's Dr. Nathan Davis Award for outstanding contributions "to promote the art and science of medicine and the betterment of the public health." This prestigious honor is given annually to the most deserving of our nation's leaders in public service, in memory and in the spirit of the AMA's founder, Dr. Nathan Davis. The AMA invited Jerry Slaughter, Barb and me to represent our state.



Senator Dole was nominated by the American College of Urology in recognition of his promotion of prostate screening tests and clinics, and for his many years of congressional leadership in medical affairs in Washington. In his acceptance speech, he expressed his appreciation for the benefits he has received from medical care dating back to his early days working in a drugstore in Russell, Kansas. Senator Dole related his memories of the Russell physicians, the long and painful recovery from wounds suffered in World War II, and now, his battle with prostate cancer. He concluded with brief remarks about the new political scene in Washington, and pledged his support for medicine in the congressional session ahead.

The list of others honored at the ceremony reads like a Who's Who in public health and legislative leadership. Senator and Mrs. Dale Bumpers of Arkansas were recognized for their dedication to the promotion of health care for children and the underprivileged. Representative Charles B. Rangel of New York was honored for his activist role in the fight against drug addiction and teenage violence. Surgeon General Antonia Novello, NIH AIDS researcher Dr. Anthony Fauci, Oregon State Senator Dr. John Kitzhaber and New York State Senator Tarky Lombardi Jr. were honored for their unique and steadfast promotion of significant health care legislation and reform which has helped focus national attention on health care reform solutions.

State and local leadership recognition was given to Dr. Carl Brumback and Florence Reeves, B.S.N., for their devotion to public health issues and leadership. Finally, Dr. Haden McKay was honored for his many years of service as mayor of

his hometown in Texas, demonstrating the importance of physicians being active in local civic leadership.

As we listened to these honorees' speeches, we felt a deep sense of pride and appreciation to each for their contributions to health care.

While in Washington, we took the opportunity to visit our elected officials there to share with them the Kansas Medical Society's concerns for health care reform. We had a whirlwind tour visiting Senator Dole, as well as Representatives Slattery, Glickman, Roberts and Myers. We were honored that they each set aside nearly an hour to meet with us and seemed genuinely interested in our concerns. We gave each a copy of the Coddington analysis of Kansas health care costs (a summary of which appeared in the December issue of KANSAS MEDICINE), so they had pertinent facts about our state for their deliberations. We shared some thoughts about the medical school's financial difficulties and about rural health care access, and we gained some insight regarding the pending debate on national health care reform.

On the last topic, no one could offer any definite idea as to how it would go. All expressed concern over "managed competition," global health care budgets, and how they could have a very negative impact on rural states such as Kansas. The approaches to the debate varied widely. However, we are represented by some very dedicated folks who hold significant leadership positions in Washington — especially Senator Dole, who is the Minority Leader in the Senate, and Representative Jim Slattery, who is the second-ranking member on the Energy and Commerce Committee, which has jurisdiction for the House of Representatives on health care reform.

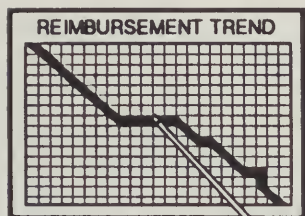
This is a very popular time for groups to visit their Congressional delegations. We saw Governor Finney, the Kansas Hospital Association delegation, and members of the Kansas television media (who were attending a national meeting) in the Capitol tunnels as we literally ran from appointment to appointment.

Oh yes, no one could predict how our new President, or Mrs. Clinton, will move health care reform through Congress. However, all were impressed by Hillary Clinton's energy and determination in seeing that the task moves forward.

*Richard Meidinger, M.D.*



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# Nonassignment Provisions as Cost Controls

WAYNE T. STRATTON, J.D.,\* *Topeka*

**T**he United States District Court for the District of Kansas recently dismissed an action brought by a Wichita hospital challenging the provisions of the Kansas Blue Cross/Blue Shield policy prohibiting assignments of insurance benefits.



In *St. Francis Regional Medical Center v. Blue Cross/Blue Shield of Kansas, Inc.*, the issue arose because of cost-saving measures adopted by the insurer. In 1992, BC/BS solicited bids from the Wichita hospitals to provide services at a contractually fixed fee discounted from normal rates. Only Wesley Hospital responded to the invitation to bid and was awarded contracting hospital status as of January 1, 1993.

One of the mechanisms used by BC/BS to induce providers to accept contracting status and, hence, reduce fees is to pay the provider directly for the billing. Moreover, BC/BS will not accept assignments of the benefits to facilitate collection by the provider. This latter provision was challenged.

The hospital argued that assignment of a chose in action (the right to receive or recover a debt) is an inherent part of Kansas law, and that the nonassignment provision was against public policy. While the court dealt with other issues, this was the chief argument of the hospital, and the issue of most significance to Kansas physicians.

The court found that the state laws pertaining to assignment of benefits were preempted by the provisions of the Employee Retirement Income

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**"The current opinion supports the Blues' efforts to reduce costs by nonassignment provisions."**

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Security Act (ERISA). This federal act preempts "any and all State laws insofar as they may now or hereafter relate to any employee benefit plan." Notwithstanding the fact that not all of the policies issued by Blue Cross are employee benefit policies, and others may not fall under ERISA, the court found that preemption existed. The court concluded that assignability of benefits would, if found applicable, directly affect the plan by nullifying one of its most important provisions.

The court concluded that even if preemption did not result, the free assignment policy was counterbalanced by the right of freedom of contract. A third public policy, and one of importance to the court, was the "policy of attempting to restrain the growth of health care costs."

The court referenced several Kansas statutes which have been adopted over the years as being indicative of a strong public policy to "control the explosion of health care costs." The court quoted with approval from a Nebraska decision finding that a nonassignment provision was a "valuable tool" in holding down hospital costs.

While the court's decision may be subject to modification or reversed upon appeal, the current opinion supports the Blues' efforts to reduce costs by nonassignment provisions.

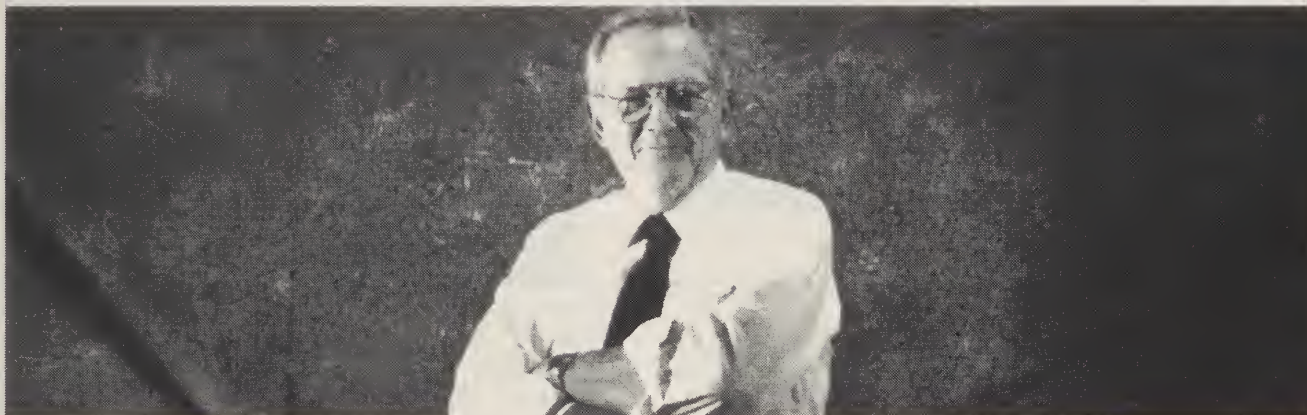
\*KMS Legal Counsel.

Comments appearing herein are not intended as a substitute for legal analysis or advice. Answers to legal questions depend largely upon the particular facts of a case. The reader is urged to consult an attorney for answers to specific legal questions.

These comments do not necessarily represent the views of KANSAS MEDICINE, or the Kansas Medical Society. For further information, contact Mr. Stratton, 515 S. Kansas, Topeka, KS 66603, 1-800-332-0248.



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# Is Your CPR Training Up to Date?

**D**ear Physicians of Kansas:

February is Heart Month, and my heart goes out to each of you, knowing that with government controls, a mountain of required paperwork, and the fear of litigation many of the positive aspects of your practice have diminished. Yet each day, you go about the business of saving lives and improving the health of Kansans.



Now let's focus on some of the other hearts in Kansas. I'm sure many of you read the October 28, 1992, issue of *JAMA*, the issue with the most current recommendations for emergency cardiac care. Having served on the ACLS and BCLS committees of the Kansas Affiliate of the American Heart Association for many years, I too awaited the formal presentation at the national ECC scientific meeting held in Dallas last February. I thoroughly enjoy teaching layperson CPR, professional rescuer CPR and advanced cardiac life support. I am very proud of Clay County Hospital, which is one of the very few in Kansas where 100% of the staff is currently certified in both CPR and advanced life support. Over 90% of our professional nursing staff is also currently certified. This is a commitment of time and energy

that certainly affects the team efforts of our hospital care.

Nationwide the push is to try to increase dramatically the number of individuals on the street who are trained in, or at least informed of, basic CPR. The new guidelines are simplified in many areas to augment this training.

When was the last time you took a basic CPR course? If it has been more than two years, you need to enroll in an update class. Yes, I know you rarely are the one doing CPR, but it is a good idea to update so you are aware of the changes. As a little incentive, when you register for the KMS Annual Meeting this spring you will save \$5 if you send in a copy of your current CPR card and another \$5 for auxiliary registration if your spouse's card is current.

Why not take a class with your spouse and children? Make it a family affair if your children are old enough. My 12-year-old did an excellent job with CPR as his scout project. Could you sponsor a class for your office staff? For your church?

Perhaps you already do these things regularly. If so, thank you for your continued commitment. But many times when I ask a group of physicians or auxiliaries how many are currently certified in CPR, the response is less than what I hope for.

Think about it. This is a good time to renew. If you are not sure how to go about setting up a class in your area, ask the education department at the hospital, or the local EMS personnel. I am sure they will be happy to work within your time frame and make it as easy as possible to meet your request. Remember: the heart that is saved may be your own — or one close to your own.

Focus on CPR training has been one of my goals for this year. I asked each county auxiliary to sponsor one class during the year, and more than half of them have already done so. At the convention I will ask for a show of hands, and I'm hoping for a *big wave*.

From the heart with the **B - E - A - T**.

Terrie Browning



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# KMS Position Statements

*While the Legislature is in session, KANSAS MEDICINE will keep you informed of the Kansas Medical Society's positions on health-related issues under consideration. Progress and outcomes on these matters will be reported in the semimonthly KMS Legislative Bulletin.*

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## Worker's Compensation Medical Costs

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The rapidly rising cost of worker's compensation insurance remains a highly contentious issue involving numerous parties: employers, workers, health care providers, insurance companies and, of course, legislators. The complexity of the problem challenges all sides, and reform appears a necessity. Unfortunately, there are widely divergent views on the direction reform efforts should take.

Expenditures for health services provided to injured workers do represent a significant portion of overall program costs. However, it is erroneous to believe that health care costs are the only factor contributing to the rise in worker's compensation insurance rates. The problem is rooted in the complex tangle of legal and administrative requirements that makes up the structure of the worker's compensation system. Attempts to solve the problem by focusing solely on health care services will not produce the desired result.

In an effort to solve the problem, the 1990 Kansas Legislature enacted House Bill 3069. The former Director of Worker's Compensation argued that charging excessive fees represented the major issue in worker's compensation. Lawmakers sought to determine the scope of the problem. In hopes of controlling the ever-increasing costs, the Legislature passed Substitute HB 3069, which mandated the development of a medical fee schedule. The law required that the Director of Worker's Compensation obtain approval from an advisory panel prior to the implementation of the fee schedule, and KMS was given one seat on the eight-member panel.

The KMS has consistently maintained that a medical fee schedule would not address all the

problems in the worker's compensation system. Although a reasonable fee schedule may prevent excessive charges without jeopardizing physician participation, an unreasonable schedule can result in consequences which are detrimental to the program.

If physicians no longer earn reasonable reimbursement for treating worker's compensation patients, some may be less likely to take the cases. This action would create an identifiable dilemma. An unreasonable fee schedule could duplicate the access problems that presently exist in the Medicare and Medicaid systems.

The advisory panel recently fulfilled its mandate and approved a medical fee schedule for worker's compensation. Despite that success, during this legislative session, there will be a concerted effort to repeal the panel's authority.

KMS believes it is essential to maintain the delicate balance between cost containment and an injured worker's access to medical care. To ensure that end, KMS strongly endorses the continued existence and participation of the advisory panel. Without the panel's input, the possibility of the adoption of an unreasonable fee schedule is very real. The advisory panel's recommendations can assure that injured workers continue to enjoy access to quality care.

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## Health Care Provider Tax

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At the November 1992 meeting of the Legislature's Joint Committee on Health Care Decisions for the 1990s, Donna Whiteman, Secretary of Social and Rehabilitation Services (SRS), attempted to renew legislative interest in the "provider assessment," a special tax on physicians and other health care providers.



The proposed Medicaid provider tax would require physicians to pay a fee or other type of tax for the purposes of increasing the state's ability to fund the program and obtain matching federal funds. Secretary Whiteman implied that a portion of the allocation of the new revenues would be directed toward physicians through improved reimbursement rates for services rendered.

The Medical Assistance Program budget has expanded rapidly in the last several years, and representatives of SRS often explain the budget growth as "medical inflation" or "provider cost increases." Because of this, legislators and the public often infer that physicians and other providers of medical care receive increasing rates for their services. Obviously, that is not the case.

The principal reason for the cost increases rests in the fact that the State now provides more care to needy Kansans. The number of individuals receiving care has grown substantially in the past several years. Expansion of the special children and pregnant women's population, the AFDC population, and the disabled and blind population, makes necessary an increase in dollars required to operate the program. The increases are not due to inflated physician fees for services.

The Kansas Medical Society remains strongly opposed to the Medicaid provider tax. It is our position that physicians participating in the program are already subsidizing it and thus paying an indirect tax. The indirect tax presently paid by physicians is the difference between customary charges and Medicaid payment rates. Any additional "assessment" imposed on physicians would be discriminatory and punitive. The tax could prove counterproductive by alienating physicians and exacerbating access problems for Medicaid patients.

Generally, Medicaid reimburses physician services at rates substantially below those paid by health insurance companies for the same service. Most physician payment rates remain based on the 50th percentile of a 1976 survey of customary fees and have never been increased.

Physicians who render services to Medicaid patients understand they must forego some income that might be earned if the patients had other insurance. Still, they participate in the program out of a sense of responsibility. In many instances, physicians realize that the overhead expense of providing care will exceed the reimbursement rate, and that they must be willing to experience a net income loss in the treatment of Medicaid patients.

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In response to Secretary Whiteman's proposal, the KMS offered an alternative method of collecting necessary tax revenues. Reasoning that those who use services most extensively ought to pay in a like manner, KMS proposed that taxes on tobacco products be directed toward the Medical Assistance Program. Because consumption of tobacco products contributes significantly to the frequency and severity of illnesses and costs, it is our position that taxes paid by consumers of such products should be dedicated to state expenditures for diagnosis and treatment of illnesses and injuries.

It is important to note that the Governor has strongly endorsed a "no new taxes" policy and has, therefore, not included any tax increases in her 1993 budget. For this reason, Secretary Whiteman, after promoting the idea for nearly a year, probably will not pursue the Medicaid provider tax during this legislative session. That does not, however, preclude legislators faced with budget shortfalls from introducing such legislation at any time.

## AMA Interim Meeting

**T**he AMA Interim Meeting was held in Nashville from December 4 through 9, 1992. The major issues discussed were:

### Managed Care

This topic was discussed in a number of reports and resolutions. It is apparent from the discussion that some type of managed care concept will be promoted by President Clinton as a way to attempt to cap the expansion of health care expenditures. The AMA House of Delegates was adamantly opposed to the global budget as a tool for limiting expenditures.

### Joint Ventures

The issue of physician involvement in joint ventures surfaced again as the Council on Ethics and Judicial Affairs' report was reconsidered. This report essentially stated that it is unethical for physicians to refer patients to facilities in which they have significant ownership, unless it is the only accessible facility — and then only when disclosing to the patient that they have an interest in the facility. This does not include free-standing treatment centers in which the physician performs services on his own patients.

### Practice Parameters

This subject was discussed thoroughly, and it was felt that the AMA should take a leadership role in evaluating the parameters being developed by various insurance companies and agencies throughout the United States and attempt to develop a national standard.

### Health Access America

Several reports and resolutions were intended to strengthen this plan to provide basic health care coverage for a reasonable fee. Some groups, including the American College of Physicians, wonder if this plan has enough cost-control mechanisms in place. There is also some disagreement regarding the use of global budgets to control the cost of health care.

### Physician's Recognition Award

The Kansas delegation was especially interested in the last two meetings because of the change in the requirements for postgraduate education.

The review of this issue has been completed, and the House reverted to the original position, as requested by Kansas. Added emphasis will be placed on self-directed reading, and physicians will be able to choose one of the two options for reporting. The criteria will be established some time this year and communicated to the membership at large. Until that time, the reporting requirements remain as they have been.

### PRO Fourth Scope of Work

The AMA felt encouraged that the quality intervention plans have been removed. However, concerns have been expressed about the uniform clinical data sets and the development of guidelines to be used. Also of concern are the central data accumulation centers (regional gathering of information and regional decision making regarding the particular cases to be reviewed). The reviews themselves, however, will be done at the local PRO level.

### Summary

All in all, the meeting was fairly benign, except for the two big issues: managed care, and the Council on Ethics and Judicial Affairs' report on physician referral patterns.

We continue to urge all physicians to become active in organized medicine at all levels — county, state and national. During the next few years, as we move into a new scenario for health care delivery and finance in the United States, it will be more important than ever to speak with a unified voice so we can protect the important aspects of physician/patient relationships and also maintain an adequate financing mechanism for health care now and in the future. The quality of care is expected, but access is a concern, and cost is surfacing as a major problem, especially in dealing with technological advances and the expectations of the American people.

Your AMA delegates, whose names appear below, solicit *your* input on all the issues of the day in health care delivery.

Kermit G. Wedel, M.D., *Minneapolis*  
Jimmie A. Gleason, M.D., *Topeka*  
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# Infant Cardiorespiratory Monitor Burn

GARY L. BAKER, M.D.,\* AND MANI M. MANI, M.D.,\* *Kansas City*

Infants with patterns of abnormal ventilation are at risk for neurologic damage. This damage may range from minor neurologic deficits to death. The American Academy of Pediatrics has recognized these risks and recommended the use of home cardiorespiratory monitors.<sup>1,2</sup> Thousands of these home infant monitors are now in use, but the potential risk of monitor-related electrical injury is not well recognized.

This manuscript presents a case of a monitor electrode burn and discusses the mechanism of injury, as well as risk factors associated with this type of injury. Finally, several ideas regarding injury prevention are discussed.

## Case Summary

A previously healthy, one-month-old infant was burned by an infant cardiorespiratory monitor when the monitor electrode lead wires were inadvertently connected to a live household appliance cord, presumably by an older sibling. The household appliance cord was part of stereo equipment in the same room and was connected to a 110-volt wall socket. The infant remained within this circuit for approximately one minute. The mother responded to gurgling noises and found the infant apneic, but without cyanosis. A medically trained neighbor was summoned and found an intact carotid pulse. Spontaneous respiration returned after three resuscitative breaths.

The infant was taken to a nearby emergency room and evaluated. Her pulse, blood pressure and respirations were stable, and initial blood chemistry and arterial blood gas were within normal limits. The patient was subsequently transferred to the burn unit of our hospital, where an admitting physical examination again revealed normal vital signs. Further examination detected full-thickness burn wounds over the upper left and right thoracic regions. Both burn wounds totaled approximately eight percent of the body surface area (Figures 1 and 2).

The infant was monitored closely during the first days of hospitalization, and neither respiratory nor cardiac irregularities were observed. Several days into the hospitalization, the infant was scheduled for debridement and wound closure. Wound debridement revealed full-thickness burns with underlying coagulative necrosis of subcutaneous tissue and muscle fascia. Superficial muscle tissues underlying the fascia also showed evidence of burn-induced necrosis. Burn wounds were closed by advancement of adjacent tissue and skin graft coverage.

Postoperative healing progressed uneventfully. The infant was dismissed and followed at regular intervals.

## Discussion

An infant cardiorespiratory monitor is a small electronic instrument used to detect an infant's heart rate and respiration. Standard accessories include patient cable, electrode lead wires, reusable silicon electrodes and an electrode belt (Figure 3). The infant monitor proper is connected to a standard wall socket through its own power cord.

Monitors employ modern electronics equipment and circuitry to detect breathing and heart rate. Respiration is detected by determining the difference in impedance (resistance) between two electrodes placed on the chest. Generally, a signal is passed between the two electrodes, and the impedance changes in that signal during respiration are measured. An electrical signal produced by the patient's heart is picked up by the left monitor electrode and is used to determine heart rate.

A correctly assembled cardiorespiratory monitor attaches the electrode's lead wires to the patient cable, which in turn connects to the cardiorespiratory monitor base station. In our reported case, the electrode lead wires were mistakenly plugged into a live household appliance cord (Figure 4).

Cardiorespiratory monitor design permits three dangerous situations whereby a burn injury could occur.<sup>3</sup> First, the electrode lead wires can be incorrectly plugged into the monitor power

\*Section of Plastic Surgery, KUMC-KC.

Address correspondence and reprint requests to Dr. Baker at Section of Plastic Surgery, Sudler 5043, KUMC-KC, 39th & Rainbow Boulevard, Kansas City, KS 66103.





*Figure 1. Full-thickness burn eschar overlying left hemithorax. The burn wound is in the pattern of the heated cardiorespiratory monitor electrode.*

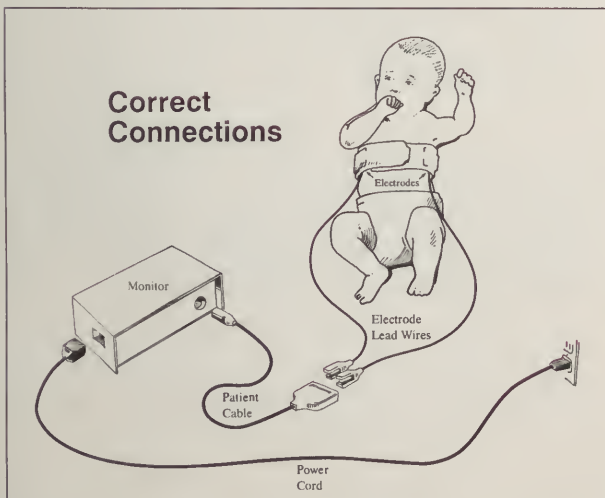


*Figure 2. A somewhat larger electrode-related full-thickness burn wound over the right hemithorax. This wound covers approximately four percent of the body surface area.*

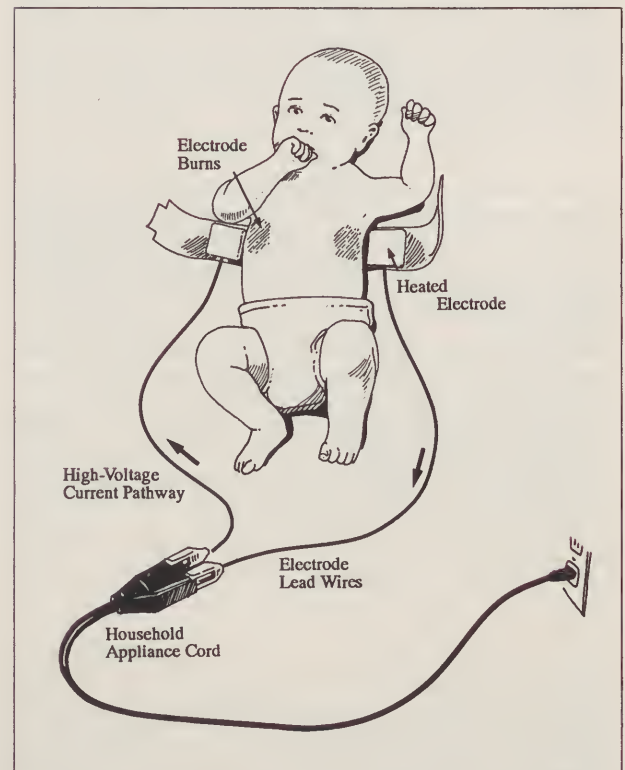
cord. Second, the electrode lead wires can be incorrectly plugged into a wall socket. Finally, the electrode lead wires can be incorrectly plugged into a household extension cord or appliance cord. This last situation was the alleged mechanism of injury in our infant. To compound matters, electronic medical monitoring equipment has also been reported to cause electrical injuries through internal malfunction, improper grounding and electrolytic burns beneath skin electrodes.<sup>4,5</sup>

Katcher discussed several risk factors which may contribute to the occurrence of monitor-induced electrical injuries.<sup>3</sup> The first factor is the attractiveness of electric power cords to children. Oral

commissure burns are a notable result of this fascination. A second factor is the presence in the home of an older (>9-month-old) child. This could be either the child being monitored or an older sibling. Older children are quite capable of inappropriately connecting power cords to lead wires. A final risk factor is the presence of infants



*Figure 3. A correctly connected infant cardiorespiratory monitor. Note that electrode lead wires are first plugged into monitor, then into power cord.*



*Figure 4. Incorrectly connected monitor. Electrode lead wires are connected directly to a household appliance cord, which in turn is plugged into a 110-volt wall socket.*

and small children in the vicinity of uncovered wall outlets.

Increased use of cardiorespiratory monitors by health professionals and parents should be accompanied by heightened awareness of potential risks of improper use, especially if the environment includes other small children. The following specific injury-control precautions should be taken.<sup>3</sup>

- Electric power cords should be unplugged and stored when not in use.
- Electrode lead wires should be completely disconnected and removed from the monitored child when not in use.
- Older children should not be left unsupervised while wearing a monitor or when in the vicinity of a monitored child.
- Children should be instructed not to handle monitor components.
- Children should be cautioned not to insert objects into power cords, extension cords or wall sockets.
- Parents should be trained in CPR, especially in homes where a monitor is in use.

In addition to the in-use precautions listed above, equipment manufacturers should design monitors so that electric power cords cannot be unplugged from the monitors, and electrode lead wires cannot be mistaken for household electric cords or plugged directly into wall sockets.

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## THE WAY IT WAS

(From the *Transactions of the Kansas Medical Society*, May 11, 1880.)

### ECLAMPSIA PUERPERALIS HYSTERICA

**C. C. Shoyer, M.D., Leavenworth, Kansas.**

Mrs. S., aged 30, married at 17 and aborted a few months afterwards; foetus a few weeks old; supposed to have been occasioned by an injury to the abdomen through falling against a fence. After this miscarriage or abortion she always had monthly convulsions. Again aborted at four months. Then carried a child eight months, and owing to the convulsions, had forcible labor induced by means of ergot, etc. Afterward aborted again at three or four months. Then had an induced abortion by means of ergot, etc. The forced abortions were recommended to save her life, as she was supposed to have eclampsia puerperalis. There was at no time albumen in the urine. I attended her in her last confinement. Convulsions well marked and violent, frothing and biting of tongue; bit her arms and bit her attendants. Required strong arms of husband and some female friends to restrain her. Strong abdominal efforts, but uterus quiescent. I advised delay, urging delivery in forty-eight or seventy-two hours of a living child. In three days a living healthy female child was born during my absence and that of the husband who came for me. The child is alive, aged fourteen months May 8th, this year. No convulsions of any kind have occurred since, thus showing plainly the influence of the uterus in producing hysterical eclampsia. Now mark, this lady through mistaken diagnosis had her life endangered, and lost the fruits of successive pregnancies. The diagnostic points in her case were very plain, no albumen in urine, no casts, no oedema, and pupils responsive to light.



# Reflex Sympathetic Dystrophy

STEVEN R. GEISLER, M.D.,\* AND RODNEY L. JONES, M.D.,† *Wichita*

**R**eflex sympathetic dystrophy (RSD) is a disorder characterized by burning pain, hyperesthesia, swelling, hyperhydrosis and trophic changes in the skin and bone. It can be precipitated by a wide variety of factors, including minor nerve damage, sprains, dislocations, fractures, surgery, myocardial infarction, soft tissue injury and infection. The precipitating event does not have to be severe, and in some patients no predisposing insult can be identified. Indeed, many cases follow seemingly minor injuries to regions particularly rich in nerve endings. In the literature, the term reflex sympathetic dystrophy is replacing and unifying several pain disorders thought to be caused by sympathetic hyperactivity. These disorders include causalgia, Sudeck's atrophy, shoulder-hand syndrome, algodystrophy and traumatic angiospasm, among others.<sup>1</sup> There is no correlation between the severity of the injury and the incidence, severity and course of the disease.<sup>2</sup> The first description of an RSD-type syndrome was in 1864 by Mitchell and associates, following ballistic injuries during the Civil War.<sup>3</sup> This syndrome he termed causalgia. Since that first description, many labels have been applied to various presentations of sympathetic hyperactivity. The unifying term RSD is useful in classification, but the clinician must be cognizant of the diverse precipitating events, as well as RSD's varied presentations.

## Clinical Manifestations

The mechanism for the signs and symptoms of RSD is thought to be an abnormal reflex mediated by the sympathetic nervous system.<sup>4</sup> Initially, RSD may occur within days to weeks after injury. Burning pain out of proportion to the injury is common. Hyperesthesia can be so intense that the patient dreads almost any tactile stimulus. Contact with clothing, bedding, noises, vibration, air currents and movement has been de-

scribed as a triggering event for the hyperesthesia and may, therefore, be avoided by the patient.

Without treatment, RSD may progress through three stages, each lasting anywhere from weeks to months.<sup>5</sup> The symptoms usually start distally and spread proximally. In some cases, other extremities become involved without the advent of new injury. The first stage is characterized by a burning or aching pain, hyperesthesia, localized edema, muscle spasm, hyperthermia or hypothermia, and increased hair and nail growth in the affected area. Bony changes may be present on roentgenograms or bone scan.

In stage two the edematous tissue becomes indurated with glazed overlying skin. The hair becomes scant and the nails brittle, cracked and heavily grooved. Roentgenograms may reveal diffuse bone demineralization.

The third stage is characterized by marked trophic changes that eventually become irreversible. The skin is thin and shiny, and the fingertips are wasted. Atrophy of the muscles, particularly the interossei, is marked. Flexion or Dupuytren's contractures may occur as the fascia becomes thickened. Roentgenograms often show bony demineralization and ankylosis.

Patients with RSD may seem emotionally labile, anxious and socially withdrawn. The combination of the emotional sequelae of the disease and the disparity between the physical signs and the degree of pain may lead many physicians to believe that the pain is psychogenic. Unfortunately, RSD is frequently misdiagnosed and improperly treated. This often further aggravates the patient's psychologic symptoms, causing them a prolonged and, at times, permanent disability.

## Treatment

Various therapies have been recommended for the treatment of RSD. Early recognition and aggressive management are essential for a successful outcome. Treatment often includes a combination of pain relief, physical therapy and interruption of the sympathetic hyperactivity.

Physical therapy, with exercises directed toward increasing range of motion in the affected extrem-

\*Private practice of anesthesia.

†Private practice, and clinical assistant professor of anesthesiology at UKSM-Wichita.

Address correspondence and reprint requests to Dr. Jones at 1040 Rutland, Wichita, Kansas 67206-3823.

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Brief, concise **articles** are preferred; an ideal manuscript will not exceed five double-spaced pages. All material will be edited by the editorial staff to assure clarity, good grammar and appropriate language, and to conform to KANSAS MEDICINE style and format. When feasible, material may be condensed.

The author will be asked to review the **galley proof** prior to publication. Although editing and proofreading will be done with care, the author is responsible for accuracy of material published. The galley proof is for correction of **ERRORS**; rewriting of material *must* be done prior to submission. Authors are urged to check manuscripts and galley proof carefully for errors that could result in inaccurate information.

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ity, is effective if adequate pain relief can be obtained prior to the initiation of exercise.

Transcutaneous electrical nerve stimulation (TENS), calcium channel blockers, nonsteroidal anti-inflammatory agents, corticosteroids, and antiadrenergic agents, including phenoxybenzamine and propranolol, have been reported to be helpful.

Sympathetic nerve blockade constitutes the primary and most effective treatment of RSD. Intravenous regional sympathetic blockades with guanethidine, reserpine and bretylium have been used with varying degrees of success.<sup>6</sup> Stellate ganglion blocks with local anesthetics are particularly useful for upper-extremity RSD management. Lower-extremity RSD can be treated with epidural or perilumbar sympathetic blockade. The response to properly executed sympathetic blockade is dramatic and prompt. Often, marked pain relief is noted within minutes following a sympathetic block. An improvement in function and warming as well as decreased swelling over the ensuing hours to days is common. Patients who are treated promptly have the best chance for successful treatment. Often a series of sympathetic blocks is necessary. Usually, the more protracted the RSD syndrome has become, the more aggressive the treatment required. If a series of sympathetic blocks produces complete but only temporary relief, chemical or surgical sympathectomy should be considered. With correct diagnosis and early treatment, over 80 percent of the patients with reflex sympathetic dystrophy can be cured.

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# Recent-Onset Temporal Lobe Seizures Caused by an Unusual Intracerebral Mass

JOHN J. KEPES, M.D.

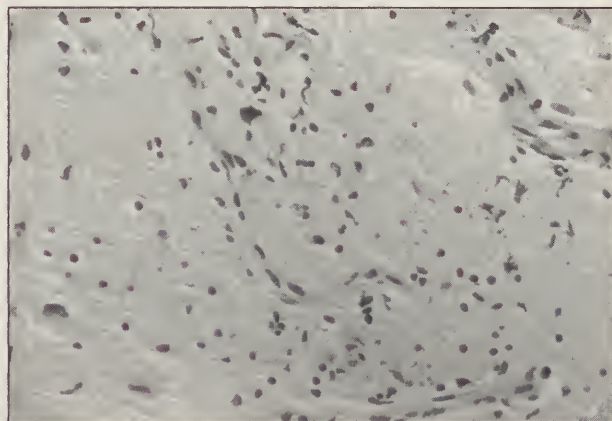
**H**istory: A previously healthy 32-year-old man developed "spells" that consisted of episodes of memory loss and confusion. They appeared to be compatible with complex partial seizures. He was treated with anticonvulsants and had an MRI study of his head, which revealed a lesion in the medial portion of the right temporal lobe. The exact nature of the lesion was not clear from the scans. He was followed for three months, and a repeat scan was done which showed no change in the size of the lesion. At that time radiological evaluation of the scans suggested a low-grade glioma of the temporal lobe as the most likely diagnosis. The patient was admitted to the Section of Neurosurgery of Kansas University Medical Center and on October 19, 1992, a right frontotemporal craniotomy was performed. The surface of the brain in the exposed area appeared normal. Biopsies taken from the surface of the right temporal lobe showed no abnormalities on frozen section. Exploration of the medial portion of the lobe yielded a second biopsy, which showed an increase of astrocytes with slight nuclear atypism, but not sufficiently so to warrant the diagnosis of a glial neoplasm (Figure 1). Further dissecting eventually exposed a firm, white mass with a fibrous-appearing wall and white, somewhat gritty content, the cut surface of which had a mother-of-pearl-like sheen. Frozen sections from this latter area showed laminated, wavy masses of keratin originating from a fairly thin layer of epidermis (Figure 2a). It was apparent that the masses of keratin produced by the epidermis were instrumental in compressing the epidermal layer into a fairly thin membrane. Permanent paraffin sections showed the layers of normal epidermis — stratum basale, spinosum, granulosum and corneum — to be present (Figure 2b). The epithelial cells showed no atypism or anaplasia. The diagnosis was intracerebral epidermal inclusion cyst of the right temporal lobe. The

patient tolerated the procedure well, his postoperative course was uneventful, and he was discharged on the third postoperative day with discharge medication of dilantin and decadron to be tapered over the next few days.

## Comments

Epidermal cysts of the central nervous system are, for the most part, considered to derive from inclusion of ectodermal elements at the time of closure of the neural groove, between the third and fifth week of embryonic life. An exception is the group of spinal canal enclosures secondary to repeated lumbar taps, as in children who suffered from meningitis (mostly tuberculous) in the pre-antibiotic era, and whose resultant increased intracranial pressure was relieved by daily spinal taps: fragments of epidermis have been driven in through omission of the stylet. (Choremis et al.,<sup>1</sup> Blockey and Schorstein,<sup>2</sup> Batnitzky et al.<sup>3</sup>)

Epidermoid cysts are estimated to make up 0.2 to 1 percent of all intracranial tumors (Russell and Rubinstein<sup>4</sup>). They can occur from birth up to 80 years, but their greatest number is clinically detected in the fifth decade, followed by the fourth and sixth decades. (Our patient was 32



*Figure 1. Biopsy from the immediate neighborhood of the cyst shows cerebral white matter with increased numbers of astrocytes, some of them having hyperchromatic and irregularly shaped nuclei (reactive astrocytic gliosis). Hematoxylin-eosin  $\times$  200.*

From the Department of Pathology and Oncology, University of Kansas Medical Center. Address correspondence to the author at Dept. of Pathology & Laboratory Medicine, 3901 Rainbow Blvd., Kansas City, KS 66160-7410.

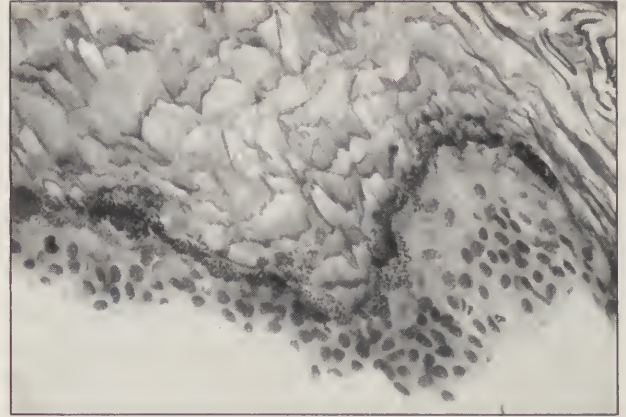
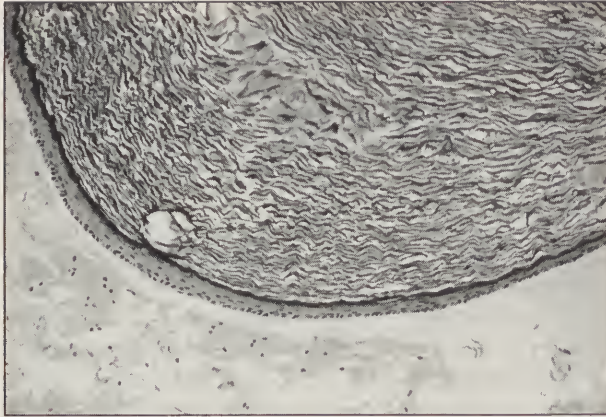


Figure 2. Wall of the epidermoid cyst shows the usual layers of the normal epidermis (a) with a well developed stratum granulosum (b), and multiple laminated layers of keratin produced by the cyst lining. H&E a.  $\times 80$ ; b.  $\times 260$ .

years old, early in his fourth decade of life.) They may be located within the diploë, and most often intracranially, but external to the brain itself, as in the pontocerebellar angle or the suprasellar area. It is, however, rare to find them within the parenchyma of the cerebral hemispheres (Peyton and Baker<sup>5</sup>) and because of this, unless the radiological scans show the typical densities associated with a keratin-filled cyst, they may be difficult to identify preoperatively within the brain tissue proper. In our case the preoperative diagnosis was "most likely low-grade glioma." An additional complication for the pathologist examining a biopsy from the neighborhood of such a cyst is the possible presence of reactive gliosis, which may be at times and in some foci sufficiently florid to raise the suspicion of an astrocytoma. The findings of the typical cyst wall lined by keratinizing, stratified squamous epithelium allows the correct diagnosis to be made.

Epidermoid cysts are not true neoplasms; the growth rate of their lining cells was found to approximate that of the epidermis of the normal site (Alvord<sup>6</sup>). Occasionally, however, the squamous lining cells of the cyst may change to carcinoma, with extensive invasion of the neighborhood following as a consequence. Another complication of epidermoid cysts, even in the benign state, is

possible rupture, either spontaneous or surgery-induced, with secondary spilling of the degenerating keratin contents into the ventricles or the subarachnoid space. This can provoke a quite severe and even life-threatening sterile "chemical" meningitis, a complication shared with ruptured dermoid cysts. The treatment of clinically symptomatic epidermoid cysts of the brain is surgical removal, which may present some technical difficulties depending on the localization of the lesion, but total removal usually results in a complete cure.

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# Alcohol-Related Mortality in Kansas, 1990

In the 1990 Behavioral Risk Factor Survey, 13% of adult Kansans reported acute drinking (defined as having 5 or more alcoholic drinks on one occasion during the previous month), 3% reported chronic drinking (defined as consuming more than 60 alcoholic drinks per month on average), and 3% reported driving after having too much to drink during the previous month. All three patterns of alcohol abuse were at least twice as common among males than among females. Persons 18 to 24 years of age reported the highest rates of alcohol abuse.

In an attempt to characterize the public health impact of alcohol use in Kansas, the Department of Health and Environment entered 1990 mortality data into computer software designed by the Centers for Disease Control and Prevention to estimate alcohol-related mortality. Table 1 (see next page) shows the diagnostic categories associated with alcohol use. The number of deaths in each diagnostic category was multiplied by the

alcohol-attributable fraction to determine the number of alcohol-attributable deaths.

In 1990, there were an estimated 910 deaths related to alcohol in Kansas. This represented 4.1% of all deaths in the state. Deaths related to alcohol were mainly due to injuries (43%), cancer (16%) and digestive diseases (14%). Males accounted for 64% of all alcohol-related deaths. As a percentage of all deaths, alcohol-related mortality disproportionately affected young adults (Figure 1), mainly as the result of motor vehicle crashes. The average years of potential life lost (life expectancy minus age at death) for each alcohol-related death were 23 years.

This analysis illustrates the magnitude of the public health impact of alcohol in Kansas. Potential interventions to reduce alcohol consumption include raising the excise tax on alcohol, providing public education campaigns, and supporting alcohol treatment programs. Because such a large percentage of alcohol-related mortality is from injuries, particularly motor vehicle crashes, greater efforts are also needed to decrease drinking and driving. Possible interventions include lowering legal blood alcohol concentration limits, increasing enforcement of "drunk driving" laws and enacting mandatory motor vehicle safety-restraint laws.

Reported by: Disease Investigation and Control Section,  
Bureau of Disease Control, Kansas Department of Health  
and Environment

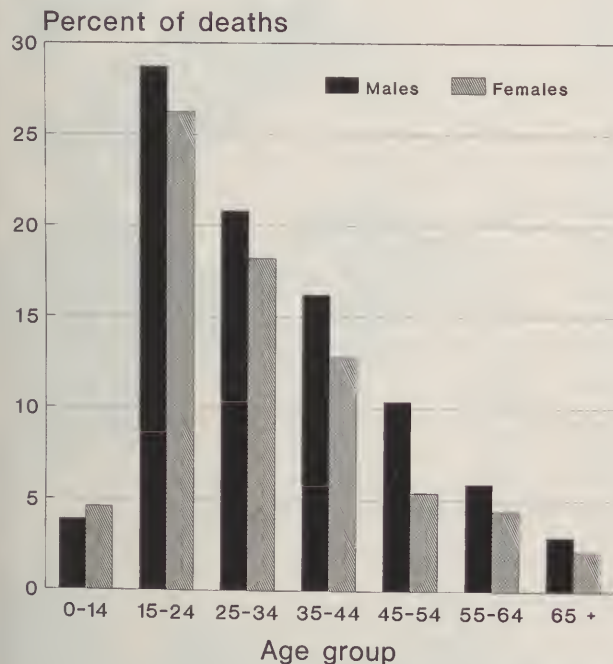


Figure 1. Alcohol-related deaths as a percentage of total deaths by age group and sex (Kansas, 1990).

(Table 1 appears on the following page.)

# NEWS FROM KDHE

(Continued from preceding page.)

TABLE 1  
ESTIMATED ALCOHOL-RELATED MORTALITY BY DIAGNOSIS—KANSAS, 1990

<i>Diagnosis</i>	<i>Number of deaths</i>	<i>Alcohol-attributable fraction</i>	<i>Number of alcohol-attributable deaths</i>
Malignant neoplasms			
Lip/oral cavity	73	0.50†	34
Esophagus	88	0.75	66
Stomach	115*	0.20	23
Liver	69	0.15	10
Larynx	32	0.50†	16
Mental disorders			
Alcoholic psychosis	1	1.00	1
Alcohol dependence syndrome	36	1.00	36
Alcohol abuse	10	1.00	10
Cardiovascular diseases			
Hypertension	46	0.08	3
Alcoholic cardiomyopathy	4	1.00	4
Cerebrovascular disease	1,689*	0.07	109
Respiratory diseases			
Tuberculosis	6	0.25	2
Pneumonia and influenza	930*	0.05	46
Digestive diseases			
Esophagus/stomach/duodenum	120	0.10	12
Alcoholic fatty liver	2	1.00	2
Acute alcoholic hepatitis	8	1.00	8
Alcoholic cirrhosis	50	1.00	50
Alcoholic liver damage, unspec.	10	1.00	10
Other cirrhosis	86*	0.50	43
Acute pancreatitis	21*	0.42	8
Chronic pancreatitis	1	0.60	1
Injuries			
Motor vehicle accidents	413	0.42	173
Water transport accidents	6	0.20	1
Air transport accidents	14	0.16	2
Accidental falls	147*	0.35	51
Fires	29	0.45	13
Drownings	27	0.38	10
Suicide	295*	0.28	82
Homicide	108*	0.46	46
Other	75*	0.25	16
Metabolic disorders			
Diabetes mellitus	456*	0.05	23
All other deaths	17,206	0.00	0
Total	22,173	0.04	910

\*Includes deaths below the specified age range used to calculate number of alcohol-attributable deaths.

†Alcohol-attributable fraction is 0.40 for females.



## More on the Mennonites

To the Editor:

Regarding the article by James Lynn Casey, M.D., in the November 1992 issue (Vol. 93, No. 11, p. 306), entitled "MCAD Deficiency in the Holdeman Mennonite Population in Central Kansas," I wish to point out a serious error in the spelling of the word "Holdeman." You will notice that there is no 'r' in the word, but in the journal article throughout it was spelled "Holderman," which is incorrect. Some of the Holdeman people may not be aware of this themselves, but most of them would be.

This denomination, which was a branch off of the mainstream Mennonite Church, was started in the second half of the 19th century by John

Holdeman, who lived from 1832 to 1900. His grave is in the Lone Tree cemetery in McPherson County, Kansas. In his early years he had lived in Ohio and then Missouri, but he had gained a following from the Mennonites from various areas. . . .

Many readers will be familiar with the fact that some interesting genetic problems have been identified in the Amish groups too. Obviously, Dr. Casey's work will be very helpful to many of the Holdeman people as well as others.

Vernon Yoder, M.D.  
*Newton*



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## Health Care Reform: AMA Positioned as Major Player in 1993

Health system reform will be one of the top three priorities for the 103rd Congress and the new Administration. Fortunately, the AMA is firmly positioned as a major player, thanks to the Health Access America campaign that was up and running long before presidential electioneering began.

The AMA decided that doctors did not want to wait for someone else to come along and tell us what to do. The AMA issued its own platform in March 1990 when we brought out the far-reaching plan for health care reform, Health Access America. It was one of the first comprehensive proposals for private and public change, and drew immediate nationwide attention. The plan's basic elements -- universal coverage, employer mandate, competition and freedom of choice for patients -- speak directly to core issues of access, cost control and quality care.

Some saw Health Access America as a challenge; others saw it as a model. In most proposals receiving serious attention, you will find elements of Health Access America. The bottom line is that everyone agrees that the crisis in health care access and cost has become so severe that change is needed. The public, our patients, agree that health care reform is right up there with the economy and jobs as the most urgent issues facing the nation.

As far as doctors are concerned, we are working to ensure that organized medicine has a seat at the negotiating

table, to make a strong case for needed change.

You may have seen our ads in *Time*, *Newsweek*, *The New York Times*, *The Washington Post*, *US News & World Report*, *Fortune* and *Business Week* which spells out that Health Access America builds on the existing strengths of the medical and health care system. In the private sector, employers would be required to provide insurance for employees and their dependents. Government would provide coverage for the unemployed and indigent, making coverage universal. Our patients would be free to choose their own doctor, hospital and insurance plan.

We don't need a nationalized health system. We need a national health system solution: Health Access America.

The AMA, with the strong and steady support of the federation, has been a powerful advocate for change throughout this long, vigorous national debate. With your help, this kind of advocacy can become stronger. The 1992 election was the first step; every doctor has a stake in what comes next.

Be active in organized medicine. Claim your own seat at the health care reform table. It's the only way your voice will be heard ... and your voice may well make the difference in the long-term health of us all.



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# AMA health reform strategies for 1993

With the election of President-elect Clinton and the new Congress, the American Medical Association and the federation will have both opportunities and challenges regarding health policy. Many aspects of Clinton's proposals for health system reform are consistent with the AMA's own Health Access America. AMA leaders have already held discussions with Clinton's health transition team. The AMA wants to enhance physician involvement in public and private regulation of medical care, encourage implementation of market-oriented reforms, and prevent adverse patient care that would result from price controls or stringent global budgets.

Health Access America. In any reform plan, the AMA will continue to advocate key principles contained in Health Access America. The AMA will be a very aggressive advocate for patients and their physicians.

Federation Unity. Nearly all state medical associations have endorsed Health Access America while some national specialty societies have developed their own health care reform proposals. The AMA will emphasize our similarities to allow intensified

coalition-building during the next critical months. Unity on key health reform principles will provide us with strategic leverage with the Administration and Congress.

Managed Competition. President-elect Clinton appears to favor managed competition where insurers, hospitals, and physicians would be encouraged to develop local "health networks." The AMA will:

- develop policy specifications to make sure the AMA remains at the forefront of the managed competition debate.
- lobby to include acceptable provisions and modify objectionable proposals.
- help physician members respond to managed competition.

Negotiations. The AMA will continue to seek relief from the antitrust laws to allow physician negotiation with both the federal government and private sector, and to pursue self-regulation.

Thanks to our long-term advocacy of health system reform, the AMA and the federation are well-positioned and well-equipped to be key players in the forth-coming debate.

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**Pregnancy and lactation.** Atherosclerosis is a chronic process and discontinuation of lipid-lowering drugs during pregnancy should have little impact on the outcome of long-term therapy of primary hypercholesterolemia. Cholesterol and other products of cholesterol biosynthesis are essential components for fetal development (including synthesis of steroids and cell membranes). Since HMG-CoA reductase inhibitors decrease cholesterol synthesis and possibly the synthesis of other biologically active substances derived from cholesterol, they may cause fetal harm when administered to pregnant women. Therefore, HMG-CoA reductase inhibitors are contraindicated during pregnancy and in nursing mothers. **Pravastatin should be administered to women of child-bearing age only when such patients are highly unlikely to conceive and have been informed of the potential hazards.** If the patient becomes pregnant while taking this class of drug, therapy should be discontinued and the patient apprised of the potential hazard to the fetus.

**WARNINGS**

**Liver Enzymes:** HMG-CoA reductase inhibitors, like some other lipid-lowering therapies, have been associated with biochemical abnormalities of liver function. Increases of serum transaminase (ALT, AST) values to more than 3 times the upper limit of normal occurring on 2 or more (not necessarily sequential) occasions have been reported in 1.3% of patients treated with pravastatin in the U.S. over an average period of 18 months. These abnormalities were not associated with cholestasis and did not appear to be related to treatment duration. In those patients in whom these abnormalities were believed to be related to pravastatin and who were discontinued from therapy, the transaminase levels usually fell slowly to pretreatment levels. These biochemical findings are usually asymptomatic although worldwide experience indicates that anorexia, weakness, and/or abdominal pain may also be present in rare patients.

Although other lipid-lowering agents, liver function tests should be performed during therapy with pravastatin. Serum aminotransferases, including ALT (SGPT), should be monitored before treatment begins, every six weeks for the first three months, every eight weeks during the remainder of the first year, and periodically thereafter (e.g., at about six-month intervals). Special attention should be given to patients who develop increased transaminase levels. Liver function tests should be repeated to confirm an elevation and subsequently monitored at more frequent intervals. If increases in AST and ALT equal or exceed three times the upper limit of normal and persist, then therapy should be discontinued. Persistence of significant aminotransferase elevations following discontinuation of therapy may warrant consideration of liver biopsy.

Active liver disease or unexplained transaminase elevations are contraindications to the use of pravastatin (see CONTRAINDICATIONS). Caution should be exercised when pravastatin is administered to patients with a history of liver disease or heavy alcohol ingestion (see CLINICAL PHARMACOLOGY: Pharmacokinetics/Metabolism). Such patients should be closely monitored, started at the lower end of the recommended dosing range, and titrated to the desired therapeutic effect.

**Skeletal Muscle:** Rhabdomyolysis with renal dysfunction secondary to myoglobinuria has been reported with pravastatin and other drugs in this class. Uncomplicated myalgia has also been reported in pravastatin-treated patients (see ADVERSE REACTIONS). Myopathy, defined as muscle aching or muscle weakness in conjunction with increases in creatine phosphokinase (CPK) values to greater than 10 times the upper limit of normal was reported to be possibly due to pravastatin in only one patient in clinical trials (<0.1%). Myopathy should be considered in any patient with diffuse myalgias, muscle tenderness or weakness, and/or marked elevation of CPK. Patients should be advised to report promptly unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever. **Pravastatin therapy should be discontinued if markedly elevated CPK levels occur or myopathy is diagnosed or suspected. Pravastatin therapy should also be temporarily withheld in any patient experiencing an acute or serious condition predisposing to the development of renal failure secondary to rhabdomyolysis, e.g., sepsis; hypotension; major surgery; trauma; severe metabolic, endocrine, or electrolyte disorders; or uncontrolled epilepsy.**

The risk of myopathy during treatment with lovastatin is increased if therapy with either cyclosporine, gemfibrozil, erythromycin, or niacin is administered concurrently. There is no experience with the use of pravastatin together with cyclosporine, but it has not been observed in clinical trials involving small numbers of patients who were treated with pravastatin together with niacin. One trial of limited size involving combined therapy with pravastatin and gemfibrozil showed a trend toward more frequent CPK elevations and patient withdrawals due to musculoskeletal symptoms in the group receiving combined treatment as compared with the groups receiving placebo, gemfibrozil, or pravastatin monotherapy. Myopathy was not reported in this trial (see PRECAUTIONS: Drug Interactions). One patient developed myopathy when clofibrate was added to a previously well tolerated regimen of pravastatin; the myopathy resolved when clofibrate therapy was stopped and pravastatin treatment continued. **The use of fibrates alone may occasionally be associated with myopathy. The combined use of pravastatin and fibrates should generally be avoided.**

**PRECAUTIONS**

**General:** Pravastatin may elevate creatine phosphokinase and transaminase levels (see ADVERSE REACTIONS). This should be considered in the differential diagnosis of chest pain in a patient on therapy with pravastatin.

**Homozygous Familial Hypercholesterolemia.** Pravastatin has not been evaluated in patients with rare homozygous familial hypercholesterolemia. In this group of patients, it has been reported that HMG-CoA reductase inhibitors are less effective because the patients lack functional LDL receptors.

**Renal Insufficiency:** A single 20 mg oral dose of pravastatin was administered to 24 patients with varying degrees of renal impairment (as determined by creatinine clearance). No effect was observed on the pharmacokinetics of pravastatin or its 3 $\alpha$ -hydroxy isomeric metabolite (SQ 31,906). A small increase was seen in mean AUC values and half-life ( $t_{1/2}$ ) for the inactive enzymatic ring hydroxylation metabolite (SQ 31,945). Given this small sample size, the dosage administered, and the degree of individual variability, patients with renal impairment who are receiving pravastatin should be closely monitored.

**Information for Patients:** Patients should be advised to report promptly unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever.

**Drug Interactions:** Immunosuppressive Drugs, Gemfibrozil, Niacin (Nicotinic Acid), Erythromycin: See WARNINGS: Skeletal Muscle.

**Antipyretic:** Clearance by the cytochrome P450 system was unaltered by concomitant administration of pravastatin. Since pravastatin does not appear to induce hepatic drug-metabolizing enzymes, it is not expected that any significant interaction of pravastatin with other drugs (e.g., phenytoin, quinidine) metabolized by the cytochrome P450 system will occur.

**Cholestyramine/Colestipol:** Concomitant administration resulted in an approximately 40 to 50% decrease in the mean AUC of pravastatin. However, when pravastatin was administered 1 hour before or 4 hours after cholestyramine or 1 hour before colestipol and a standard meal, there was no clinically significant decrease in bioavailability or therapeutic effect. (See DOSAGE AND ADMINISTRATION: Concomitant Therapy.)

**Warfarin:** In a study involving 10 healthy male subjects given pravastatin and warfarin concomitantly for 6 days, bioavailability parameters at steady state for pravastatin (parent compound) were not altered. Pravastatin did not alter the plasma protein-binding of warfarin. Concomitant dosing did increase the AUC and C<sub>max</sub> of warfarin but did not produce any changes in its anticoagulant action (i.e., no increase was seen in mean prothrombin time after 6 days of concomitant therapy). However, bleeding and extreme prolongation of prothrombin time has been reported with another drug in this class. Patients receiving warfarin-type anticoagulants should have their prothrombin times closely monitored when pravastatin is initiated or the dosage of pravastatin is changed.

**Cimetidine:** The AUC<sub>0-12h</sub> for pravastatin when given with cimetidine was not significantly different from the AUC for pravastatin when given alone. A significant difference was observed between the AUC's for pravastatin when given with cimetidine compared to when administered with antacid.

**Digoxin:** In a crossover trial involving 18 healthy male subjects given pravastatin and digoxin concurrently for 9 days, the bioavailability parameters of digoxin were not affected. The AUC of pravastatin tended to increase, but the overall bioavailability of pravastatin plus its metabolites SQ 31,906 and SQ 31,945 was not altered.

**Gemfibrozil:** In a crossover study in 20 healthy male volunteers given concomitant single doses of pravastatin and gemfibrozil, there was a significant decrease in urinary excretion and protein binding of pravastatin. In addition, there was a significant increase in AUC, C<sub>max</sub>, and T<sub>max</sub> for the pravastatin metabolite SQ 31,906. Concomitant therapy with pravastatin and gemfibrozil is generally not recommended.

In interaction studies with aspirin, antacids (1 hour prior to PRAVACHOL), cimetidine, nicotinic acid, or probucol, no statistically significant differences in bioavailability were seen when PRAVACHOL (pravastatin sodium) was administered.

**Other Drugs:** During clinical trials, no noticeable drug interactions were reported when PRAVACHOL was added to: diuretics, antihypertensives, digitalis, converting-enzyme inhibitors, calcium channel blockers, beta-blockers, or nitroglycerin.

**Endocrine Function:** HMG-CoA reductase inhibitors interfere with cholesterol synthesis and lower circulating cholesterol levels and, as such, might theoretically blunt adrenal or gonadal steroid hormone production. Results of clinical trials with pravastatin in males and post-menopausal females were inconsistent with regard to possible effects of the drug on basal steroid hormone levels. In a study of 21 males, the mean testosterone response to human chorionic gonadotropin was significantly reduced ( $p < 0.004$ ) after 16 weeks of treatment with 40 mg of pravastatin. However, the percentage of patients showing a  $\geq 50\%$  rise in plasma testosterone after human chorionic gonadotropin stimulation did not change significantly after therapy in these patients. The effects of HMG-CoA reductase inhibitors on spermatogenesis and fertility have not been studied in adequate numbers of patients. The effects, if any, of pravastatin on the pituitary-gonadal axis in pre-menopausal females are unknown. Patients treated with pravastatin who display clinical evidence of endocrine dysfunction should be evaluated appropriately. Caution should also be exercised if an HMG-CoA reductase inhibitor or other agent used to lower cholesterol levels is administered to patients also receiving other drugs (e.g., ketoconazole, spironolactone, cimetidine) that may diminish the levels or activity of steroid hormones.

**CNS Toxicity:** CNS vascular lesions, characterized by perivascular hemorrhage and edema and mononuclear cell infiltration of perivascular spaces, were seen in dogs treated with pravastatin at a dose of 25 mg/kg/day, a dose that produced a plasma drug level about 50 times higher than the mean drug level in humans taking 40 mg/day. Similar CNS vascular lesions have been observed with several other drugs in this class.

A chemically similar drug in this class produced optic nerve degeneration (Wallerian degeneration of retinogeniculate fibers) in clinically normal dogs in a dose-dependent fashion starting at 60 mg/kg/day, a dose that produced mean plasma drug levels about 30 times higher than the mean drug level in humans taking the highest recommended dose (as measured by total enzyme inhibitory activity). This same drug also produced vestibulocochlear (Wallerian-like) degeneration and retinal ganglion cell chromatolysis in dogs treated for 14 weeks at 180 mg/kg/day, a dose which resulted in a mean plasma drug level similar to that seen with the 60 mg/kg dose.

**Carcinogenesis, Mutagenesis, Impairment of Fertility:** In a 2-year study in rats fed pravastatin at doses of 10, 30, or 100 mg/kg body weight, there was an increased incidence of hepatocellular carcinomas in males at the highest dose ( $p < 0.01$ ). Although rats were given up to 125 times the human dose (HD) on a mg/kg body weight basis, their serum drug levels were only 6 to 10 times higher than those measured in humans given 40 mg pravastatin as measured by AUC.

The oral administration of 10, 30, or 100 mg/kg (producing plasma drug levels approximately 0.5 to 5.0 times human drug levels at 40 mg) of pravastatin to mice for 22 months resulted in a statistically significant increase in the incidence of malignant lymphomas in treated females when all treatment groups were pooled and compared to controls ( $p < 0.05$ ). The incidence was not dose-related and male mice were not affected.

A chemically similar drug in this class was administered to mice for 72 weeks at 25, 100, and 400 mg/kg body weight, which resulted in mean serum drug levels approximately 3, 15, and 33 times higher than the mean human serum drug concentration (as total inhibitory activity) after a 40 mg oral dose. Liver carcinomas were significantly increased in high-dose females and mid- and high-dose males, with a maximum incidence of 90 percent in males. The incidence of adenomas of the liver was significantly increased in mid- and high-dose females. Drug treatment also significantly increased the incidence of lung adenomas in mid- and high-dose males and females. Adenomas of the eye Harderian gland (a gland of the eye of rodents) were significantly higher in high-dose mice than in controls.

No evidence of mutagenicity was observed *in vitro*, with or without rat-liver metabolic activation, in the following studies: microbial mutagenicity tests, using mutant strains of *Salmonella typhimurium* or *Escherichia coli*; a forward mutation assay in L5178Y TK +/– mouse lymphoma cells; a chromosomal aberration test in hamster cells; and a gene conversion assay using *Saccharomyces cerevisiae*. In addition, there was no evidence of mutagenicity in either a dominant lethal test in mice or a micronucleus test in mice.

In a study in rats, with daily doses up to 500 mg/kg, pravastatin did not produce any adverse effects on fertility or general reproductive performance. However, in a study with another HMG-CoA reductase inhibitor, there was decreased fertility in male rats treated for 34 weeks at 25 mg/kg body weight, although this effect was not observed in a subsequent fertility study when this same dose was administered for 11 weeks (the entire cycle of spermatogenesis, including epididymal maturation). In rats treated with this same reductase inhibitor at 180 mg/kg/day, seminiferous tubule degeneration (necrosis and loss of spermatogenic epithelium) was observed. Although not seen with pravastatin, two similar drugs in this class caused drug-related testicular atrophy, decreased spermatogenesis, spermatocytic degeneration, and giant cell formation in dogs. The clinical significance of these findings is unclear.

**Pregnancy: Pregnancy Category X:** See CONTRAINDICATIONS.

Safety in pregnant women has not been established. Pravastatin was not teratogenic in rats at doses up to 1000 mg/kg daily or in rabbits at doses of up to 50 mg/kg daily. These doses resulted in 20x (rabbit) or 240x (rat) the human exposure based on surface area (mg/m<sup>2</sup>). However, in studies with another HMG-CoA reductase inhibitor, skeletal malformations were observed in rats and mice. PRAVACHOL (pravastatin sodium) should be administered to women of child-bearing potential only when such patients are highly unlikely to conceive and have been informed of the potential hazards. If the woman becomes pregnant while taking PRAVACHOL (pravastatin sodium), it should be discontinued and the patient advised again as to the potential hazards to the fetus.

**Nursing Mothers:** A small amount of pravastatin is excreted in human breast milk. Because of the potential for serious adverse reactions in nursing infants, women taking PRAVACHOL should not nurse (see CONTRAINDICATIONS).

**Pediatric Use:** Safety and effectiveness in individuals less than 18 years old have not been established. Hence, treatment in patients less than 18 years old is not recommended at this time. (See also PRECAUTIONS: General.)

**ADVERSE REACTIONS**

Pravastatin is generally well tolerated; adverse reactions have usually been mild and transient. In 4-month long placebo-controlled trials, 1.7% of pravastatin-treated patients and 1.2% of placebo-treated patients were discontinued from treatment because of adverse experiences attributed to study drug therapy; this difference was not statistically significant. In long-term studies, the most common reasons for discontinuation were asymptomatic serum transaminase increases and mild, non-specific gastrointestinal complaints. During clinical trials the overall incidence of adverse events in the elderly was not different from the incidence observed in younger patients.

**Adverse Clinical Events:** All adverse clinical events (regardless of attribution) reported in more than 2% of pravastatin-treated patients in the placebo-controlled trials are identified in the table below, also shown are the percentages of patients in whom these medical events were believed to be related or possibly related to the drug:

Body System/Event	All Events %		Events Attributed to Study Drug %	
	Pravastatin (N=900)	Placebo (N=411)	Pravastatin (N=900)	Placebo (N=411)
Cardiovascular				
Cardiac Chest Pain	4.0	3.4	0.1	0.0
Dermatologic				
Rash	4.0*	1.1	1.3	0.9
Gastrointestinal				
Nausea/Vomiting	7.3	7.1	2.9	3.4
Diarrhea	6.2	5.6	2.0	1.9
Abdominal Pain	5.4	6.9	2.0	3.9
Constipation	4.0	7.1	2.4	5.1
Flatulence	3.3	3.6	2.7	3.4
Heartburn	2.9	1.9	2.0	0.7
General				
Fatigue	3.8	3.4	1.9	1.0
Chest Pain	3.7	1.9	0.3	0.2
Influenza	2.4*	0.7	0.0	0.0
Musculoskeletal				
Localized Pain	10.0	9.0	1.4	1.5
Myalgia	2.7	1.0	0.6	0.0
Nervous System				
Headache	6.2	3.9	1.7*	0.2
Dizziness	3.3	3.2	1.0	0.5
Renal/Genitourinary				
Urinary Abnormality	2.4	2.9	0.7	1.2
Respiratory				
Common Cold	7.0	6.3	0.0	0.0
Rhinitis	4.0	4.1	0.1	0.0
Cough	2.6	1.7	0.1	0.0

\*Statistically significantly different from placebo.

The following effects have been reported with drugs in this class:

**Skeletal:** myopathy, rhabdomyolysis.

**Neurological:** dysfunction of certain cranial nerves (including alteration of taste, impairment of extra-ocular movement, facial palsy), tremor, vertigo, memory loss, paresthesia, peripheral neuropathy, peripheral nerve palsy.

**Hypersensitivity Reactions:** An apparent hypersensitivity syndrome has been reported rarely which has included one or more of the following features: anaphylaxis, angioedema, lupus erythematosus-like syndrome, polymyalgia rheumatica, vasculitis, purpura, thrombocytopenia, leukopenia, hemolytic anemia, positive ANA, ESR increase, arthritis, arthralgia, urticaria, asthenia, photosensitivity, fever, chills, flushing, malaise, dyspnea, toxic epidermal necrolysis, erythema multiforme, including Stevens-Johnson syndrome.

**Gastrointestinal:** pancreatitis, hepatitis, including chronic active hepatitis, cholestatic jaundice, fatty change in liver, and, rarely, cirrhosis, fulminant hepatic necrosis, and hepatoma; anorexia, vomiting.

**Reproductive:** gynecomastia, loss of libido, erectile dysfunction.

**Eye:** progression of cataracts (lens opacities), ophthalmoplegia.

**Laboratory Test Abnormalities:** Increases in serum transaminase (ALT, AST) values and CPK have been observed (see WARNINGS).

Transient, asymptomatic eosinophilia has been reported. Eosinophil counts usually returned to normal despite continued therapy. Anemia, thrombocytopenia, and leukopenia have been reported with other HMG-CoA reductase inhibitors.

**Concomitant Therapy:** Pravastatin has been administered concurrently with cholestyramine, colestipol, nicotinic acid, probucol and gemfibrozil. Preliminary data suggest that the addition of either probucol or gemfibrozil to therapy with lovastatin or pravastatin is **not** associated with greater reduction in LDL-cholesterol than that achieved with lovastatin or pravastatin alone. No adverse reactions unique to the combination or in addition to those previously reported for each drug alone have been reported. Myopathy and rhabdomyolysis (with or without acute renal failure) have been reported when another HMG-CoA reductase inhibitor was used in combination with immunosuppressive drugs, gemfibrozil, erythromycin, or lipid-lowering doses of nicotinic acid. Concomitant therapy with HMG-CoA reductase inhibitors and these agents is generally not recommended. (See WARNINGS: **Skeletal Muscle** and PRECAUTIONS: **Drug Interactions**.)

**OVERDOSAGE**

There have been no reports of overdoses with pravastatin.

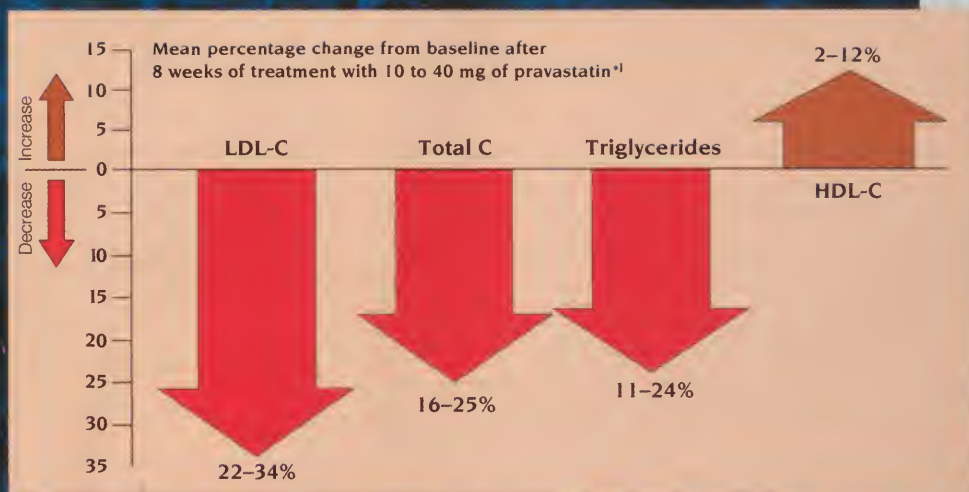
Should an accidental overdose occur, treat symptomatically and institute supportive measures as required. (J4-422A)





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\*Each arrow represents a range of means derived from a single placebo-controlled study that included 55 patients treated with pravastatin.

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**Reference:** 1. Jones PH, et al. Once-daily pravastatin in patients with primary hypercholesterolemia: a dose-response study. *Clin Cardiol*. 1991;14:146-151.

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Please see CONTRAINDICATIONS, WARNINGS, PRECAUTIONS, and ADVERSE REACTIONS in the brief summary of prescribing information on the adjacent page.



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JOURNAL OF THE KANSAS MEDICAL SOCIETY

March 1993

Volume 94, Number 3



- Special Feature: AIDS in Kansas
- Profiles of Legislators
- New Tort Threatens Kansas Physicians



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**ABOUT OUR LOGO**

In January 1935, a new logo appeared on the cover of KANSAS MEDICINE for the first time. This device represents two stethoscopes: the original monaural type as used by Laënnec, and the modern binaural variety. The logo was designed expressly for KANSAS MEDICINE by renowned graphic designer Bradbury Thompson, a native of Topeka and friend of two former editors of the journal, Dr. W.M. Mills and Dr. Lucien Pyle. As another former editor, Dr. Orville R. Clark, wrote in January 1955, the logo "has become as much a part of the journal as any of the features on the inside and is something which is ours alone."

**T**he gathering portrayed in Jim Hamil's painting on our cover is, rather clearly, at the Flint Hills Rodeo in Strong City. The activity (or inactivity) shown is unusual, not being the typical action-packed scene associated with the rodeo arena. But in this instance, we are advised, there was a delay in the more characteristic activities because of the weather. This lull gives us the opportunity to pass on some information about the event through the courtesy of Mr. Max Gordon, a member of the Flint Hills Rodeo Board.

The 56th performance is coming up June 4 through 6 of this year. An important feature (to the performers) is that the Professional Rodeo Cowboys Association, with headquarters in Colorado Springs, sanctions the event as official and therefore assures the participants that they'll get monetary and professional recognition for their accomplishments at approved events such as this. If you are interested in entering, the events include bull riding, bareback riding, saddle bronc, calf roping and steer rassling (and if you think that word is misspelled, you are not qualified to enter).

You won't know until about a week before the event whether you are actually entered, since names for the events are drawn in Colorado Springs then. You'll have to pay an entry fee for each event entered, but it is all right to try to get into more than one by paying for both. Then, if you get picked for more than one, you can choose whichever pays better. It might be you'll want to start with what seems a less hazardous effort such as ring announcer. However, be advised that a few years ago, they hired a new one who attracted some attention by falling off the horse he was sitting on while announcing the events. He remounted — and fell off again. This (and his skill as an announcer) established him as a crowd pleaser, and he has appeared ever since with general approval — and a firm seat.

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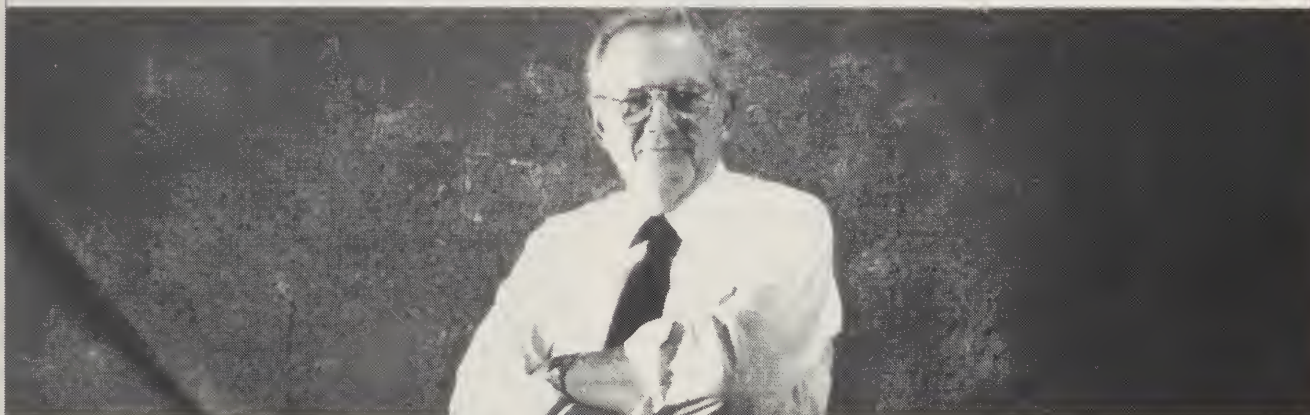
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# Progress Report

**G**iven its daily exposure through the various levels of the media, it is somewhat surprising to note that the acquired immune deficiency syndrome (almost unrecognizable under its full name) was formally born only 12 years ago. True, there were individual conditions, *Pneumocystis carinii* and Kaposi's sarcoma among them, that fell into this classification, but not until 1981 did the growing number of cases demand our realization that this was, indeed, a medical phenomenon warranting our close and continuing attention. (After all, Webster includes in the several definitions of "phenomenon": "a fact or event of scientific interest susceptible of scientific description and explanation." Of descriptions we have plenty, and the explanations constitute a picture of the societal attitudes of the day. But in its omnipresence on the daily scene, it must be a phenomenon among phenomena. And the acronym, AIDS, has become a household word.



Witnesses — and victims — of other pandemics might take exception to the idea that this is more destructive or disabling to society than earlier types, and it might even be considered premature to assess its status in comparison with others. Still, it has raised questions and issues unique to this time. To date, it is calculated that there are 13,000,000 cases of AIDS worldwide. These affect directly or indirectly virtually every country and culture, and it would be futile at this point to estimate the economic cost — though it would be staggering, even in an era when we are all but immune to staggering figures.

There has been a social maturation of sorts as painful experience has been gained. Initially, there was a degree of distress over the appearance of yet another medical problem to add to the list. But the information that the disease was almost exclusively of homosexual transmission produced a period in which the general public could note its presence, make assessments according to personal attitude toward homosexuality and go on about its business. Those who were closely involved with the disease, however, pointed out rightly that, given the general mores of the day, we could expect this condition to appear in other groups as well. The public health people, always alert to

possibilities of public effect, predicted this.

Some change of attitude has come at a painful price, the awareness that an increasing number of victims of the disease were innocent of any misbehavior by anyone's measure. These were persons who received tainted blood at transfusion and again, such victims were particularly productive of public attention — and recognition that the matter could not be dismissed by scriptural edict or social pejorative.

Even more distressing was the appearance of infected newborns for here, certainly, were victims to whom no onus should be ascribed. Perhaps, in an inverted way, they brought benefits to society, since such victims produced a much more positive public response and enhanced public efforts (economic, therapeutic and custodial) to meet the overall matter. Even so, a considerable portion of the public refuses to accept the established intelligence that transmission is more difficult than earlier believed. And the emergence of the HIV presence without clinical AIDS has complicated medical efforts to orient an obsessed public.

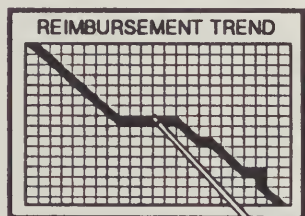
A positive by-product of the matter has been an exposure and discussion of sexual matters, licit and illicit, that would have been unimaginable a generation ago. If some have taken advantage of this emerging preoccupation with sex to promote prurient interpretations, this is a price, apparently, for acquainting a considerable segment of the public in regard to realities they would not otherwise understand. Any direct benefit of this trend will be all but impossible to assess, but this cost seems to be part of the price we must pay to reach those in need of effective guidance.

It is not surprising that the fears and frustrations of the public faced with this ubiquitous threat have brought anguished demands for relief, specifically, medical eradication. A frightened and impatient public, particularly victims, their families and contacts, demands a cure and in the classical mode calls for more and more money. Though money is, indeed, an essential ingredient in the effort, the process still takes time. Viruses are not noted for cooperating in such efforts.

In our AIDS issue in 1988, we noted that there was cause for confidence in our efforts to control this disease. There still is — it will just take a little longer. D.E.G.



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# News from KU Medical Center

**D**r. James G. Price has announced his retirement as the Dean of the University of Kansas School of Medicine. He has served the school and our state well during his 15 years as a faculty member, Chairman of the Department of Family Practice, and finally as Dean. His clinical background and private practice experience have helped him work to reemphasize primary care education and promote a broader administrative cooperation among the 15 independent clinical foundations at the Medical Center. He has been active in the Wyandotte County and Kansas Medical Societies, serving as an ex-officio member of the KMS Council. He will be missed, and we wish him well in his retirement.



A search committee has been organized with the intent of finding a new dean as soon as possible. The committee was selected by Executive Vice Chancellor Clawson and Chancellor Budig. It is chaired by Dr. Sebastian Faro, Chairman of the Department of Obstetrics and Gynecology, and has representatives from the clinical and basic science faculty. They include KMS members Dr. Ralph Robinson, Dr. Norm Estes and Dr. Anne Walling. Dr. G. Charles Loveland, of Lawrence, is the KU Alumni Association representative, and I was asked to represent KMS.

Our mission is not an easy one. We have been instructed to search out and find for the medical school a new Executive Dean who has excellent teaching, clinical and research skills. He must be a good facilitator who can bring the Medical Center faculty together academically and administratively to rebuild the faculty foundations' financial viability, and work to improve relationships with local and state physicians, the Chancellor, and the Legislature.

Financial management and leadership skills of the new Dean are of paramount importance. Why? Many of the 15 independent clinical foundations (or departments) are at or near financial crisis. This is especially true for the primary care departments. There is no single factor, and one has to consider both internal and external reasons. Federal funding for medical education was fairly generous in the '50s, '60s, and '70s, but was severely curtailed in 1983 with introduction of

the Medicare Reform Act. Faculty income has suffered even more with the introduction of the RBRVS. The Medical Center has an unusually high indigent and Medicare population, which has severely stressed the foundations' budgets. Kansas' Medicaid program has always paid physicians well below cost — currently thirty cents on the dollar for primary care departments. All 15 foundations have a Medicaid/no-pay population averaging 30%, while departments such as pediatrics — which averages 60% — are in a world of hurt. Kansas is the only state in the union which doesn't allocate extra funds for physician services in their teaching hospitals in recognition of their disproportionately high indigent/Medicaid patient load and teaching activities. There also has been a serious decline in private insurance patients seen at the Medical Center, because of increasing Kansas City-area penetration of managed care programs which send patients to other facilities. This leaves KUMC with an increasing percentage of no-pay/Medicaid patients.

The hospital is doing reasonably well. Its budget, however, is totally separate from the medical foundations'. It provides little or no financial support for the faculty foundations. In fact, this produces an added drain on the foundations because of significant clinical foundation support for education, equipment, house staff and other expenses normally paid by hospitals.

The Medical Center employs over 5,000 people and is the largest employer in Wyandotte County. Only 20 to 24% of the budget money comes from state general fund tax dollars, and it covers some faculty "teaching," allied health, non-physician salaries, and other educational overhead. The Medical Center's total budget is approximately \$300 million, greater than that of Kansas State University, and second only to KU. The professional and hospital income from patient care at the Medical Center is approximately \$150 million. The remaining \$150 million of the budget comes from restricted funds, tuition, fees, grants and research activities. Therefore, faculty salaries must come primarily from their professional services — seeing and caring for patients — and not from a direct tax base.

In 1980 the state legislature set a maximum

*(Continued on page 73.)*

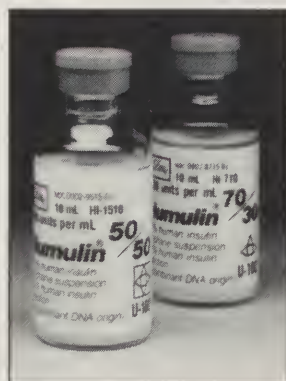




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# Spoilation of Evidence: A Developing Tort

WAYNE T. STRATTON, J.D.,\* *Topeka*

**A** recent opinion by a United States District Judge for the District of Kansas reveals a disturbing possibility of additional liability for Kansas physicians. While the opinion is based upon a motion for summary judgment and the case is yet to be finally decided, the principles of law enunciated by the court are clear.



A student at a local university was injured when a soft drink machine fell on him. He was treated locally and then flown to a larger medical center. Unfortunately, despite medical care rendered, the patient died the next day.

The treating physician made the required entries in the patient's records at the local hospital. In addition to those notes, several days after treating the patient, the doctor made personal notes concerning the treatment rendered. The notes were not extensive by any means and were maintained in the physician's personal file.

The patient's parents (the plaintiffs in this case) sent a letter to the physician indicating that a lawsuit might be filed. Subsequently, the doctor prepared a chronology of the treatment rendered to the patient, discarding his personal notes after doing so. The chronology contained everything from the doctor's personal notes. One month after their letter to the doctor, the parents filed suit. The doctor was deposed and presented the chronology he had prepared from his personal notes.

Plaintiffs alleged that the doctor had negligently and/or intentionally destroyed his handwritten notes concerning the patient's treatment and care and claimed that the doctor's conduct

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Think carefully before  
destroying any patient records.

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was a violation of common and statutory law. The plaintiffs claimed that the duty to maintain the personal notes is established by K.A.R. 100-24-1 (1992), which provides:

- a. Each licensee of the board shall maintain an adequate record for each patient justifying the course of treatment of the patient.
- b. Patient records shall be maintained by each licensee of the board or the licensee's designee for a minimum of 10 years from the date of any professional service provided.

The claim asserted against the doctor is called the tort of spoliation. "Spoliation" is the intentional destruction or alteration of evidence. This is a new tort and has not been considered in every jurisdiction. There are two types of spoliation: intentional and negligent. In those jurisdictions recognizing the tort of spoliation, the common elements required are:

1. existence of a potential civil action;
2. defendant's knowledge of a potential civil action;
3. destruction of the evidence;
4. intent to destroy the evidence;
5. causal relationship between the evidence's destruction and inability to prove the lawsuit;
6. damages.

Here, the plaintiffs allege that because the doctor discarded his notes, they were lacking an element essential to their case against the doctor. The above elements, if proven by the plaintiffs, would be adequate to prove intentional spoliation. For negligent spoliation, the same six elements must be proven and there must also be a statutory duty breached. The plaintiffs alleged that the doctor breached a duty to maintain his personal notes in regard to the patient, established by K.A.R. 100-24-1.

In another recent case the Kansas Supreme Court determined that an action for spoliation of evidence would not be allowed. The decision

\*KMS Legal Counsel.

Comments appearing herein are not intended as a substitute for legal analysis or advice. Answers to legal questions depend largely upon the particular facts of a case. The reader is urged to consult an attorney for answers to specific legal questions.

These comments do not necessarily represent the views of KANSAS MEDICINE, or the Kansas Medical Society. For further information, contact Mr. Stratton, 515 S. Kansas, Topeka, KS 66603, 1-800-332-0248.



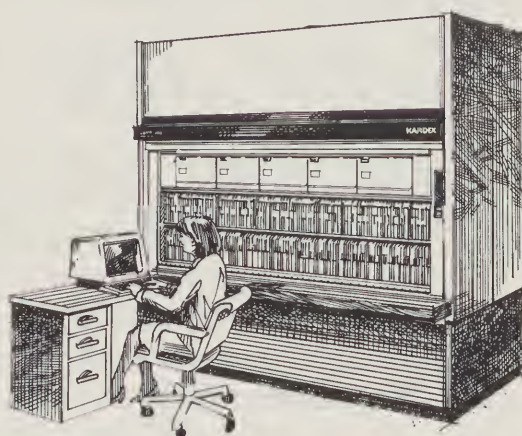
indicated that in an appropriate case, it may be recognized. In doing so, it discussed a Florida decision in which the court found that a hospital had a statutory duty to maintain and make available medical records. A record was not available, and the plaintiff claimed that his medical malpractice action was compromised by the lack of a complete record. The court allowed a claim against the hospital for alleged negligent spoliation of evidence.

The Kansas Federal Court determined in the soft drink machine case that the issue of whether or not the physician had been guilty of spoliation of evidence was a matter for determination by the jury. The court concluded that there was a duty to maintain records pursuant to K.A.R. 100-24-1 (1992), and this regulation would include the personal notes. The issue of whether the duty had been breached is a question of fact to be determined by the jury. To do this, the jury will evaluate the doctor's action of destroying the personal notes.

This case has significant implications for Kansas health care providers. No other profession or industry has as many regulatory provisions obligating potential defendants of personal injury actions to maintain records. If such record is destroyed at any time the physician is aware of a potential civil action, a claim of spoliation can be made.

Commentators have long cautioned physicians to avoid any actions which might have the appearance of changing or deleting records. The fundamental reason for such advice is that such actions can be construed as being tantamount to an admission of liability. Now, another reason has surfaced: plaintiffs may include a spoliation claim in any case involving the loss of a record. The effect is the same in either instance. It diverts the jury's consideration from the merits of the case. Instead of defending a case that might be successfully litigated if tried upon the merits, the defendant is placed in the position of defending a claim that will be more difficult to win.

Any destruction of records should only be done pursuant to a well-thought-out record retirement policy. In no event should any record be destroyed if the physician has any knowledge of the possibility of a civil action.



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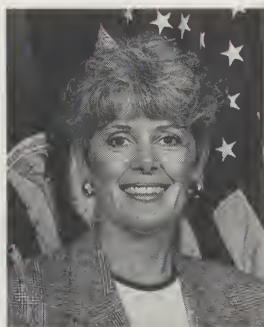
# Five Legislators with an Interest in Health Care Issues

*This year one state senator and four representatives in the Kansas Legislature have more than the usual degree of interest in health care legislation. Of the five, one is a KMS member and the others are spouses of members. KMS Director of Communications Allison Peterson interviewed these individuals and asked them to discuss their respective legislative philosophies and comment on their expectations for this session.*

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## Sandy Praeger

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I have a strong sensitivity toward issues of health. My background in the medical community has allowed me to gain information and knowledge that many do not have," says Senator Sandy Praeger (R-Lawrence) when asked what influence her medical background has on her agenda as a legislator. "I certainly do not come with any biases. My husband, KMS member Mark Praeger, M.D., is often critical of his profession and I feel as if we have an open exchange of ideas and issues."

From her work as a founding member of the indigent clinic in Lawrence, Sen. Praeger has built a base of concern and knowledge regarding the health of Kansans. "Access to care is perhaps the most critical issue facing the state today. Those who are medically underserved must be given access to quality care, both financially and geographically," she states.

Sen. Praeger believes a solution to our health care crisis will be created on a national level. Meanwhile, some short-term solutions have been accomplished at the state level. "In the last several years, we have reformed the insurance industry to

expand coverage, and we have increased access in rural areas through the EACH/PCH program," she says. Sen. Praeger also hopes that several managed care pilot projects will begin in Kansas, as that is the direction in which federal legislation seems to be moving.

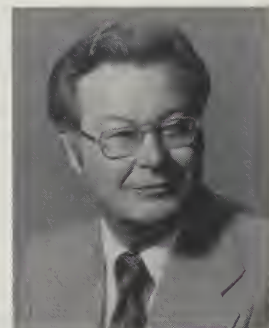
"The big picture contains goals of reducing health care costs, improving accessibility and prevention. That is our focus," Sen. Praeger said. Her chairmanship of the Senate Public Health and Welfare Committee targets that basic premise. "The little pieces of the picture are the individual bills which we hope will work to meet the overall goals of the state."

The challenge of health care reform looms large on the state horizon this year. But Sen. Praeger is ready. "I love the problem-solving aspect of my position," she states. "I like to see the progress, and I gain great gratification in the solutions, no matter how temporary."

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## Alex Scott, M.D.

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I nteraction in the Kansas House of Representatives often parallels the qualities of a physician-patient relationship. "It is all based on trust,"



according to Representative Alex Scott, M.D. (R-Junction City and KMS member), the only physician in the Legislature. "As a physician I have a different point of view. I tend to see things as a scientist, rather than using the legalistic approach," he explains. "I understand the medical nature of issues like carpal tunnel syndrome and abortion. So many representatives lack first-hand knowledge of those issues. I am able to honestly inform my colleagues of the facts of a given situation, and they trust me to be fair."

Throughout his years in the House, Dr. Scott has realized that his responsibility to his constituents is nearly the same as to his former patients. "First and foremost, I bring the admonition to do no harm," Rep. Scott says. "I am to look for the very things which will benefit my own community, increase the public safety, benefit the public welfare, and have the least impact on human freedom."

"As representatives, we must focus on the issues which impact progress. We must keep taxes low enough that they do not impede the establishment of new businesses in Kansas. We must keep ourselves attractive to the outside world." Dr. Scott recognizes that members of the House must evaluate all issues for their fairness and individual impact.

Success in the worlds of medicine and politics, according to Dr. Scott, may be defined in much the same way. "Success requires that one hold a definition of wealth that understands that you can only wear one suit, drive one car, and live in one house at a time," he remarks. "One who understands that definition will be a mature individual who makes the right decisions more often than not."

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## Rochelle Chronister

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**A**rmed with a true desire to serve her state and a background in microbiology and research,

Rochelle Chronister (R-Neodesha) has succeeded in the world of Kansas politics. Representative Chronister serves as the first female chairman of the House Appropriations Committee.

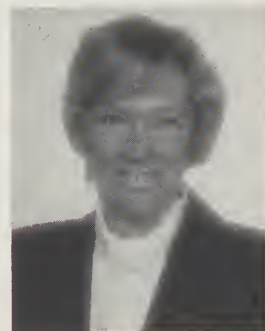
A conservative philosophy of fiscal responsibility dominates Rep. Chronister's chairmanship. "The state should never do any more for individuals than is necessary," says Rep. Chronister. "Kansans should be allowed to keep as much of their money as possible. Taxes should be as low as we can make them." Rep. Chronister also adds that she hopes members of her committee are as frugal with the state's money as they are with their own. "It is important that we use our money in a way that gives us the biggest bang for our buck."

*(Continued on page 70.)*

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## Cindy Empson

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**U**pon examination of her family's occupations, it is clear that Representative Cindy Empson (R-Independence) comes from a strong medical background. She is a registered nurse, married to a family physician and KMS member, Charles Empson, M.D. Her mother works in the medical records arena, and her sister is also a registered nurse. She has grown up with an interest in and knowledge of medical matters.

"My medical background makes me more aware of public health and safety issues," Rep. Empson says. "I have good insight into the issues surrounding medicine and feel as if I have somewhat of an advantage because of my involvement and experience in the medical community."

She notes that her background should come in handy this legislative session, adding: "Health care will be a major issue for both the state and the nation this year. The state has a tough challenge in that it must attempt to provide some type of health coverage to all Kansans without

destroying the state financially.”

Fiscal policy and monetary responsibility top Rep. Empson’s list of important issues facing the state today. She notes that every program and agency has a price tag and that in addition to funding existing programs and agencies, Kansans would like the opportunity to do some new things.

“Unfortunately,” she says, “many of those opportunities must be bypassed because we are running low on money. We have taxed the citizens of Kansas about as much as we can, and we must look for a new approach. It is time for us to closely examine state agencies for duplication and remedy that. We must use our money in the best way possible, to the best advantage of all Kansans.”

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## Joann Freeborn

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**P**olitics has always been a part of Representative Joann Freeborn’s life. “As I was growing up, politics and current events were a central part of my family’s existence,” she says. “I remember many conversations around the dinner table concerning the events of the nation and the world. I had a great love for current events all through high school, and while we were dating, my husband (KMS member Warren Freeborn, Jr., M.D.) and I discussed the possibility of my running for public office. It has always been in the back of my mind. When this door opened, I took the chance. I happened to win.”

With her strong background and knowledge in the workings of government, Rep. Freeborn (R-Ames) easily adjusted to life as a freshman representative. She learned quickly that the key to success was organization. “If you want to be successful . . . making lists of priorities will help,” she remarks. “I know how to run on a schedule, so that doesn’t bother me. Staying mentally orga-

nized is the key. I am learning what is important and what is not. That helps, too.”

Rep. Freeborn recognizes that there are many issues which she must absorb. Of those facing Kansas, she believes worker’s compensation reform is of central importance. “Worker’s compensation is expensive. Small business owners are concerned about the cost of the insurance, and it is important to ensure every individual fair coverage,” she says. “Fortunately, there is an excellent proposal coming out of the House which will both contain costs and assure the continuation of coverage for all workers with legitimate claims.”

Even as she is bombarded daily with new information and issues of importance to her community, Rep. Freeborn keeps her sense of humor. “Some people go to Florida for the winter,” she says. “I come to Topeka.”

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## ROCHELLE CHRONISTER

*(Continued from page 69.)*

As the spouse of KMS member Bert Chronister, M.D., Rep. Chronister recognized the importance of health care legislation “back when it wasn’t so popular.” One of the first bills she introduced as a member of the Kansas House proposed funneling state moneys from the cigarette tax to increase the budgets of local health departments. “My background in medicine has furthered my concern for health issues,” she observes. “One of the most important issues facing Kansas today involves access to quality health care. It is my hope that we can responsibly allocate money to programs which would serve to alleviate that problem.”

Rep. Chronister’s diverse background and her sincere love of Kansas have been assets at the statehouse. “When I went back home to Neodesha after finishing my training, there wasn’t much need for a microbiologist, so I had to do something else.” And even though her training lends itself to the scientific, Rep. Chronister believes that it has benefited her greatly in her capacity as a state representative. “My experience has been helpful,” she says. “I tend to examine situations from a scientific viewpoint. I gather all the information possible, analyze it, and only then do I make a decision.”



# Ring-Enhancing Lesions on CT Scan and Blindness in an AIDS Patient

JAMES L. FISHBACK, M.D.

**H**istory: A 46-year-old Hispanic male was discovered to be HIV positive in June 1989 when he entered KUMC because of severe diarrhea and marked dehydration. His social history was obtained through an interpreter, and he denied IV drug use or homosexuality. However, he did indicate that a previous female sexual partner had been an IV drug abuser. He recovered enough from his dehydration to be discharged, and was followed thereafter by social workers and visiting nurses. He had an episode of secondary syphilis in July 1989, treated successfully with benzathine penicillin. That month he also was discovered to have esophageal candidiasis, treated with Fluconazole. He continued to have intermittent bouts with diarrhea until August 1989, when he was diagnosed with *Pneumocystis carinii* pneumonia and treated with sulfamethoxazole/trimethoprim. This particular drug had a positive effect on his diarrhea, the exact cause of which was never discovered. In October 1989 he presented with markedly decreased visual acuity, and a diagnosis of cytomegalovirus (CMV) retinochoroiditis was made. He had difficulty seeing a high-wattage light bulb in his apartment. His presumed CMV chorioretinitis was treated with ganciclovir (125–250 mg qd). In November 1989 he again presented to the KUMC emergency room with severe headache and blindness.

His November 1989 workup disclosed ring-enhancing lesions on CT scan. *Toxoplasma* Sabin-Feldman dye-test titers were markedly elevated at > 256,000. An IgM direct agglutination test for *Toxoplasma* was also strongly positive. Ophthalmoscopy disclosed severe retinochoroiditis, which was again thought to be most consistent clinically with CMV infection. The patient was treated for presumed CNS toxoplasmosis with sulfadiazine (2 gm qd), folic acid (10 mg qd) and

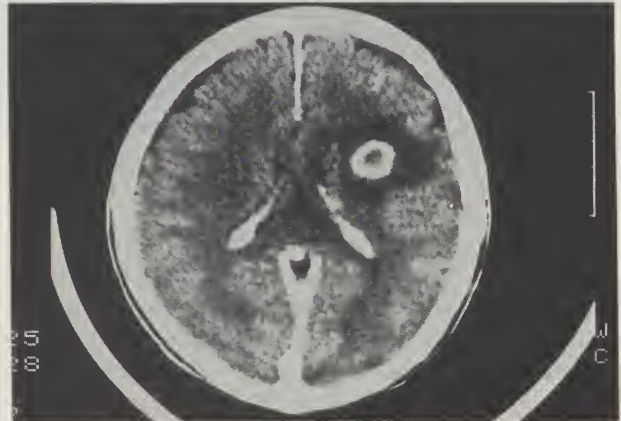


Figure 1. CT scan, post-contrast, from the July 1990 admission. The ring-enhancing lesion and surrounding edema are readily visible.

pyrimethamine (100 mg qd). His ring-enhancing lesions and severe headache resolved, and in January 1990 he was discharged and placed on maintenance anti-*Toxoplasma* therapy consisting of sulfadiazine (500 mg qid), pyrimethamine (25 mg 3 times weekly) and Leucovorin (50 mg 3 times weekly).

When admitted for the last time on June 29, 1990, he was noted to be aphasic. A CT scan on that day showed bifrontal hypodensities, right parietal hyperdensities, and obliterated ventricles. He was started on Dexamethasone, with some improvement. By July 3, 1990 he was able to answer simple questions posed by a Spanish interpreter. A follow-up CT scan on July 6 showed ring-enhancement of the right parietal lesion (Figure 1). By July 10, he was speaking in complete sentences, despite having experienced a generalized seizure on July 7, which was treated with phenytoin. However, on July 19, 1990 his mental status decreased markedly. By July 24 he had experienced another seizure and was unresponsive to painful stimuli. At 7:00 p.m. that day he had a cardiac arrest and was not resuscitated.

## Autopsy Findings

Most of the significant findings were within the central nervous system. Sections from the eyes

From the Dept. of Pathology and Laboratory Medicine, KUMC-KC.

Address correspondence and reprint requests to Dr. Fishback at 3901 Rainbow Boulevard, Kansas City, KS 66160-7410.

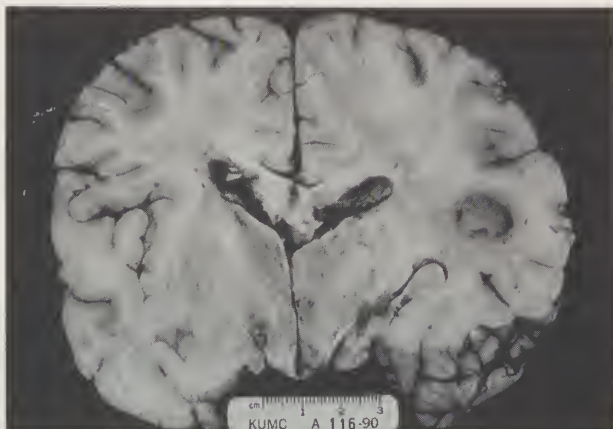


Figure 2. Formalin-fixed brain from autopsy. The ring-shaped lesion in the right parietal lobe is easily seen.

showed retinal necrosis with little choroidal reaction. No CMV inclusions were found. *In situ* DNA hybridization of the retina for CMV and immunoperoxidase reaction for *Toxoplasma* were negative.

The brain weighed 1350 grams and showed evidence of cerebellar tonsillar and uncus herniation. Gross sections of formalin-fixed brain showed areas of necrosis and hemorrhage involving the frontal and parietal lobes (Figure 2), which on gross examination were thought to be consistent with toxoplasmosis. However, microscopic examination showed atypical lymphoid cells surrounding cerebral vessels (Figure 3), typical of angiocentric immunoblastic lymphoma found in AIDS.<sup>1</sup> Immunoblastic lymphoma was also found involving the pericardium. No cysts or tachyzoites of *Toxoplasma* were found microscopically despite multiple sections and immunoperoxidase staining. Inoculation of unfixed autopsy brain tissue into mice also failed to detect *Toxoplasma*.

### Comment

Even though CMV was not evident in sections of retina, it was readily seen in the medulla of the adrenal glands, suggesting that it was the most likely cause of the retinal necrosis found at autopsy. *Toxoplasma* can also cause retinochoroiditis, but usually shows a more prominent granulomatous choroidal reaction. The prolonged treatment with ganciclovir probably had an effect on the CMV infection in the retina, making it difficult to find viral inclusions, although nearly complete retinal necrosis was evident.

The ring-enhancing lesions first discovered in November 1989 were never biopsied, but the pa-

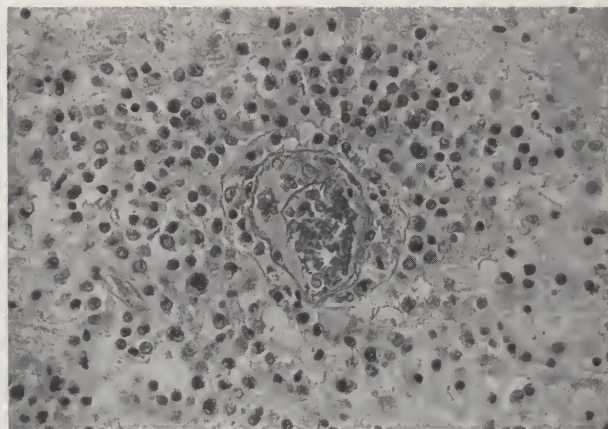


Figure 3. Photomicrograph of cerebral vessel surrounded by atypical lymphocytes, consistent with angiocentric immunoblastic lymphoma (32x).

tient's high antibody titers and remarkable improvement on anti-*Toxoplasma* medications suggest that the initial diagnosis of recrudescent toxoplasmosis was correct. He was maintained on adequate anti-*Toxoplasma* prophylaxis up to his last admission, so the development of new ring-enhancing lesions due to *Toxoplasma* would have been very unusual, but was strongly suspected clinically because of his previous diagnosis and the possibility of a drug-resistant *Toxoplasma* strain arising.

Angiocentric lymphoma and other lymphoproliferative lesions are more common in AIDS and other immunosuppressed patients. Recent molecular pathology evidence indicates that the Epstein-Barr virus (EBV) may have a pathogenic role in the development of these lesions.<sup>2,3</sup> *In situ* DNA hybridization was unable to detect EBV DNA in this patient's lymphoma, however.

This very complex case points out the necessity of keeping an open mind about diagnostic possibilities when dealing with AIDS patients. The radiologic differential diagnosis for CT ring enhancement is long and includes simple abscess, cisticercosis, HIV, CMV, and demyelinating diseases such as progressive multifocal leukoencephalopathy, besides toxoplasmosis and CNS lymphoma, both of which were seen in this patient. In the first case report of CNS lymphoma in an AIDS patient, one of the index patients had been treated for toxoplasmosis for a time.<sup>4</sup> This is not to say that presumptive treatment of a *Toxoplasma*-seropositive AIDS patient for toxoplasmosis, given a compatible CT or MRI, without doing a biopsy is incorrect treatment. Indeed, in many cases it may be preferable.<sup>5</sup>

Another interesting aspect of this case is the



lack of microscopic evidence for *Toxoplasma* infection at autopsy. Normally, one would expect to find many unruptured cysts in a patient with such high titers against *Toxoplasma*. Within toxoplasmic lesions one would expect to find the rapidly proliferating tachyzoites.<sup>6</sup> Perhaps the prolonged treatment with anti-*Toxoplasma* chemotherapy was responsible for reducing the number of organisms to a level that could not be detected by light microscopy. Later polymerase chain reaction studies for *Toxoplasma* DNA<sup>7</sup> were positive in the brain and heart from this patient (data not shown), indicating persistent *Toxoplasma* infection.

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#### PRESIDENT'S MESSAGE

(Continued from page 62.)

38% limit on the percentage of state funds that can be used for physician faculty salaries. This is for "teaching activities," and comes from the state general fund. Senior university administrators split this money among the various clinical departments, resulting in a range of general support of faculty salaries from 9% to 66% among the departments. Sound OK so far? In reality many of the KUMC faculty salaries rank in the lower tenth to twentieth percentile for medical schools.

The budgetary system is set according to state rules, which are really not applicable for hospital use. The hospital is not allowed to fund depreciation for equipment replacement, and there is only year-to-year allocation of funds with little long-range planning. The budget does not take into account the full cost of residency training, and the foundations must make up the difference, leaving as much as \$1.7 million to come out of the incomes of the 260 clinical faculty members. This includes residents' salaries, benefits, parking, etc. There are around 15 residency positions that the Legislature has not funded.

Part of the blame, however, must be shouldered by the faculty foundations. They have acted independently for years, not sharing administrative or management functions. This has created a colossal morass of management nightmares. There are at least 15 separate billing computers, little cooperative interdepartmental scheduling, and frequently incomplete or lost billings for patient services. Some of the departments have collection rates as low as 48% on charges. Consultation reports are not always sent in timely fashion, giving the impression that the Medical Center is "stealing" patients from referring physicians.

The foundations have recognized these organizational problems and have recently formed the Association of Clinical Practices to bring their chairs together for discussion of mutual problems and management difficulties. Hopefully, this will make things more efficient, improve reimbursement, allow realistic strategic planning, and improve communication among the chairs, hospital administration, the university and private physicians.

What can we do? First, send paying patients to the Medical Center. This is not a hospital of last resort for the indigent! We can work with our state legislators to encourage a meaningful study

(Continued on page 88.)

# The Epidemiology of HIV/AIDS in Kansas

KAREN TAPPAN, M.P.A.

**S**ince the first reported case of acquired immune deficiency syndrome (AIDS) in 1981, over a quarter million cases have been reported in the United States. Through 1992, Kansas had reported a total of 722 cases of AIDS. The number of cases diagnosed each year continues to increase (Figure 1). Seventy-one percent of persons reported with AIDS in Kansas are known to have died.

The annual rate of AIDS (cases reported per 100,000 population) for Kansas was 7.6 for the latest reporting period (October 1991 through September 1992). This compares to rates of 12.6 in Missouri, 12.4 in Colorado, 7.1 in Oklahoma and 4.3 in Nebraska. The national rate during this reporting period was 17.6 cases per 100,000 population, ranging from 0.9 in Wyoming to 116.7 in the District of Columbia.

Seventy-two percent of the AIDS cases in Kansas have been reported from the four largest counties in the state (Sedgwick: 185; Johnson: 151; Wyandotte: 119; and Shawnee: 66). However, at least 79 (75%) of the 105 counties in Kansas have been affected by the epidemic (Figure 2).

Ninety-four percent of AIDS cases reported in Kansas have occurred in males. The major risk category for persons with AIDS in Kansas has been men who have sex with men (Table 1). Male homosexuals account for 71% of all Kansas AIDS cases, compared to 57% of the United States total. Injecting drug use is the second most common risk factor, accounting for 8% of the state total and 22% of the national total.

Eighty-seven percent of AIDS cases in Kansas have occurred in persons 20 to 49 years of age. This is comparable with national data. Kansas cases have ranged in age from less than one to 73 years old. Eighty-three percent of AIDS cases in Kansas have occurred in whites, 13% in blacks, and 4% in Hispanics. For comparison, the popula-

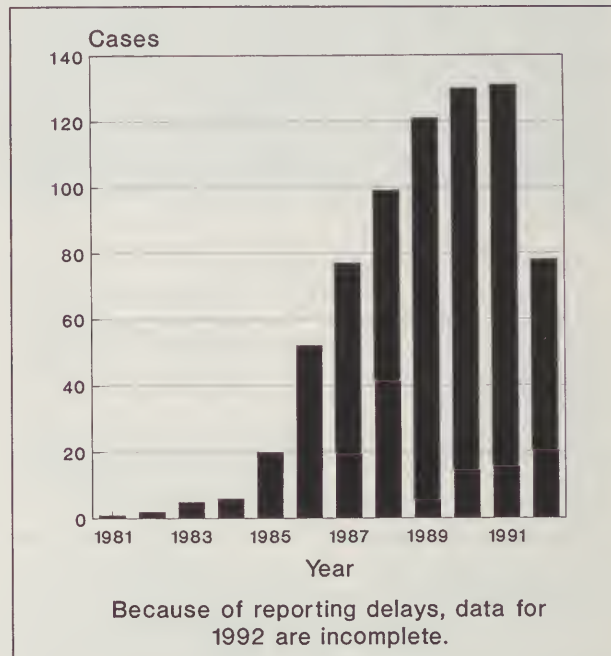


Figure 1. AIDS cases by year of diagnosis — Kansas, 1981-1992

tion of Kansas is 90% white, 5% black and 4% Hispanic.

Since July 1990, persons infected with the human immunodeficiency virus (HIV), but who have not yet developed AIDS, have also been reported to the Kansas Department of Health and Environment (KDHE). During the past two and one-half years, 656 individuals have been reported in Kansas with HIV. Persons with AIDS are excluded from this number.

Although the data on persons infected with HIV are limited, there are several interesting findings. Females comprise only 6% of Kansas AIDS cases, but account for 13% of persons reported with HIV. A similar situation occurs among blacks. Blacks account for 14% of AIDS cases, but 27% of HIV reports (Figure 3).

Because of the long latency period from infection with HIV to development of AIDS, HIV data tend to be more helpful than AIDS data for analyzing recent trends in the epidemic. Whereas AIDS was initially confined largely to the gay,

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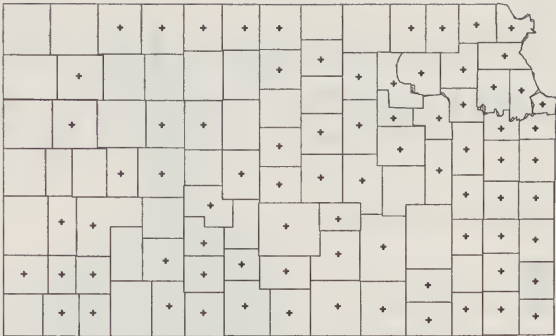
white male population in Kansas, recent data suggest that the virus is now affecting larger numbers of females, blacks, injecting drug users and heterosexuals. Infection from contaminated blood products has essentially been eliminated through the careful selection of blood donors and sensitive screening tests.

Although the exact number of HIV-infected persons in Kansas is unknown, it is estimated that there are more than 5,000. In an effort to monitor trends in HIV prevalence among residents of the state, three seroprevalence studies are currently being performed.

The first study involves Job Corps applicants. The Job Corps is a residential occupational training program for disadvantaged youth ages 16 to 21 years, which is administered by the U.S. Department of Labor. Persons are not excluded because of hemophilia, sexual orientation or past use of drugs; only current drug addiction is an excludable factor. From 1987 through 1990, 0.06% of Kansas entrants were HIV-infected.

The second study involves U.S. military applicants. From 1985 through mid-1992, 36,846 Kansas applicants were tested; 16 (0.04%) were HIV positive. When interpreting this figure, it is important to remember that injecting drug users, homosexuals and persons known to be HIV-infected are currently excluded from the military. These three groups are, therefore, under-represented among applicants actually tested.

The third study involves testing all newborns in the state for HIV using blood samples that were initially submitted to the Kansas Health and Environment Laboratory for metabolic screening. Blood samples are only tested after personal identifiers have been removed from the specimen. Since beginning in 1990, a total of 97,196 HIV tests have been done on newborns. Nineteen specimens (0.02%) were confirmed positive. The



+ Counties having reported or treated at least one person with HIV/AIDS.

Figure 2. Counties affected by HIV/AIDS, Kansas, 1981-1992

mothers were residents of 12 different counties. Eight were white, ten were black and one was Hispanic. The median age of the mothers was 25 years, with a range from 17 to 31.

Results from newborn testing provide a measure of HIV infection among reproductive-age females in Kansas because the test reflects passive antibody acquired in utero. Approximately one-third of infants born to HIV-infected mothers will become infected themselves. The other two-thirds will test HIV-negative after they have cleared maternal antibodies, usually by 12 to 15 months of age.

Besides the three seroprevalence studies, statistics are also kept on HIV results from counseling and testing sites and correctional facilities. In both instances, people who are tested are self-selected as "at-risk" for infection with HIV. From 1985 through mid-1992, 67,544 specimens were tested from counseling and testing sites in Kansas; 763 (1.1%) were positive. From 1986 through mid-1992, 5,395 inmates in Kansas were tested for HIV; 52 (1.0%) were positive.

(Continued on page 77.)

TABLE 1 AIDS CASES BY TRANSMISSION CATEGORY: KANSAS, 1981-1992		
	Male (n=681)	Female (n=41)
MSM*	75%	0%
IDU†	7%	27%
Transfusion	6%	29%
MSM/IDU	6%	0%
Heterosexual	2%	34%
Other	4%	10%

\*MSM = men who have sex with men.  
†IDU = injecting drug user.

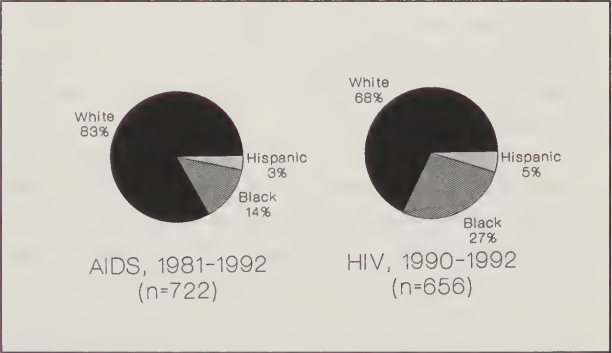


Figure 3. AIDS and HIV cases by race and ethnicity in Kansas

# Knowledge and Attitudes about HIV/AIDS among Kansans

KAREN PIPPERT\*

**T**his article contains the preliminary findings on HIV/AIDS from the 1992 Kansas Behavioral Risk Factor Survey (BRFS). The BRFS is a random-digit-dialed telephone survey coordinated by the Centers for Disease Control and Prevention. The 1992 survey consisted of interviews with 1,440 Kansas residents.

## Knowledge

Ninety-two percent of respondents had heard of the AIDS virus called by the name HIV. Seventy-five percent of respondents thought that a person who is infected with the AIDS virus can look and feel well. The percent of individuals who were unsure of this answer or who responded incorrectly was highest among older age groups and persons with low incomes and  $\leq 12$  years of education.

Forty-nine percent of respondents were aware that there are drugs that can lengthen the life of a person infected with the AIDS virus. Persons with low incomes and  $\leq 12$  years of education were less likely to be aware of the availability of effective drugs.

Thirty-eight percent of Kansans believed that a person could become infected with the AIDS virus from donating blood. An additional 12% did not know or were unsure. Only 50% of respondents stated that a person could not become infected from donating blood.

Sixty-six percent of individuals thought they could become infected with HIV through a health care worker who had the virus. Eighty-two percent of respondents knew that a pregnant woman who had the AIDS virus could give it to her baby.

Knowledge about the effectiveness of condoms in preventing transmission of the AIDS virus through sexual activity is shown in Figure 1. Seventy-eight percent of respondents thought that condoms were somewhat or very effective in pre-

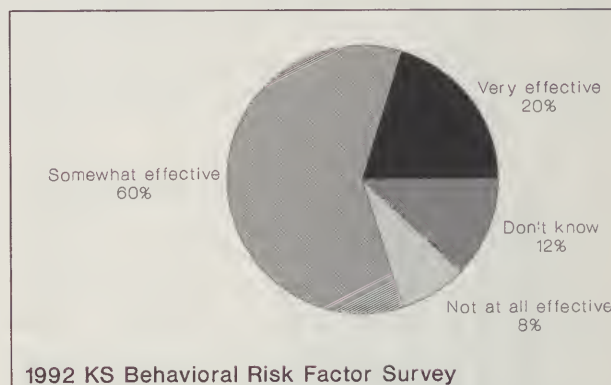


Figure 1. Responses to the question, "How effective are condoms in preventing transmission of HIV through sexual activity?"

venting the sexual transmission of HIV.

The most common answers for the question, "Where could you go to be tested for the AIDS virus?" were a private physician or health maintenance organization (46%), the health department (17%), and a hospital or emergency room (13%). Less than 2% of respondents mentioned a blood bank, plasma center or the Red Cross.

## Attitudes

Three hundred seventy-four survey participants had at least one child in kindergarten through eighth grade. These individuals were asked, "At what grade do you think your child should begin AIDS education in school?" Less than one percent of parents felt that AIDS education should not be offered in school; 5% did not know or were unsure. The responses for the remaining 94% of parents are shown in Figure 2. As can be seen in the bar chart, 49% of parents wanted AIDS education to begin by second grade and 89% wanted it to begin by sixth grade.

Parents with at least one child in kindergarten through eighth grade were also asked if they would allow their child to be in the same classroom with a child infected with the AIDS virus. Seventy-one percent said they would, 22% were undecided, and 7% said they would not.

When asked if they would be willing to work

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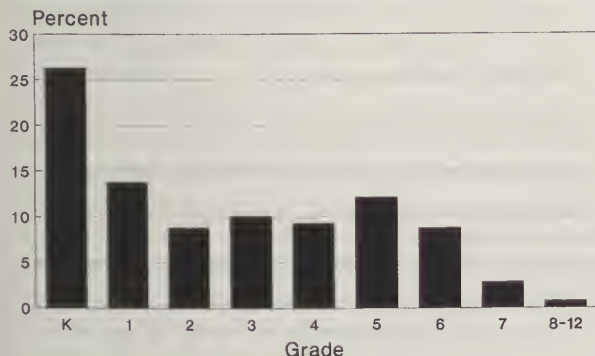
with a person infected with the AIDS virus, 67% of respondents said they would, 21% were undecided and 12% said they would not. However, only 26% of survey participants said they would be willing to eat in a restaurant where the cook was infected with the AIDS virus.

### Comment

The results of the 1992 Kansas Behavioral Risk Factor Survey provide a mixture of good and bad news. It is encouraging that over 90% of Kansans have heard of HIV, that more than three-quarters knew that an HIV-infected individual can look and feel well and that less than 2% would use a blood bank for HIV testing purposes. (In order to protect the blood supply, transfusion services should not be used by individuals to determine their HIV status; such individuals should be tested by their private physician or at a public counseling and testing site.)

It is discouraging, however, that half of the surveyed Kansans believe that a person can become infected with HIV from donating blood, or that almost three-quarters would not eat in a restaurant with an HIV-infected cook.

Public education about HIV and AIDS has been successful in some areas, but there are still many individuals in Kansas who are misinformed about the basic facts regarding HIV and AIDS. Much remains to be done to educate the public. Results of the BRFs indicate that the vast majority of parents support AIDS education in elementary schools. This is important as youth are a major target group for prevention activities. Results of subsequent Behavioral Risk Factor Surveys will allow public health officials to monitor trends in knowledge and attitudes about HIV/AIDS among Kansans and measure the effectiveness of health education campaigns.



1992 KS Behavioral Risk Factor Survey

Figure 2. Grade at which parents want their child to begin AIDS education in school.



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## EPIDEMIOLOGY OF HIV/AIDS

(Continued from page 75.)

While no single seroprevalence study provides information on the entire population of Kansas, each study supplies data for specific population groups. As data are collected over time, it will be possible to monitor trends in infection rates.

Data from mandatory reporting of HIV/AIDS and seroprevalence studies provide information on the course of the epidemic in Kansas. This information is important for a number of reasons. First, federal funding for services to persons with HIV/AIDS is dependent on the number of cases reported by each state in the country. If Kansas does not have complete reporting, then the state does not receive its fair share of federal funds. Second, the information allows policymakers at the state and county level to make informed decisions about the allocation of medical and social services. Third, reporting provides KDHE with the information necessary to identify individuals in need of services provided by the state AIDS Program. These include drug reimbursement, home health care, insurance continuation and coordinated care (see article on page 78). Finally, surveillance data allow public health officials to assess the impact of disease control efforts.

# Public Health Services for HIV/AIDS Patients in Kansas

SALLY FINNEY, M.Ed.\*

**T**he AIDS Section of the Bureau of Disease Control in the Kansas Department of Health and Environment (KDHE) is responsible for providing the services described below. This spectrum of services starts with prevention. The Kansas AIDS Program continues to focus on two prevention avenues: primary, by working with the uninfected; and secondary, by working with persons infected with the human immunodeficiency virus (HIV) and their partners. Though the numbers of reported cases of HIV infection and AIDS have increased steadily over the past 11 years, the vast majority of Kansans remain uninfected. However, despite massive efforts to educate the public about HIV infection, growing numbers of adults and adolescents engage in behaviors that put them at high risk for transmission of the virus. The greatest challenge for the AIDS Program remains that of reaching these individuals.

## Health Education and Risk Reduction

In 1985, the Kansas Legislature appropriated funds to support KDHE contracts with local health departments for provision of HIV health education and risk reduction services in their communities. Since then, federal funding through the Centers for Disease Control and Prevention has been added to support the AIDS Program and to provide additional funding for HIV education projects with local health departments and community-based organizations throughout the state.

KDHE contracts with 16 local health departments (Barton, Butler-Greenwood, Crawford, Douglas, Ellis, Finney, Johnson, Leavenworth, Lyon, Montgomery, Reno, Riley, Saline, Sedgwick, Shawnee and Wyandotte), and with three community-based organizations to conduct HIV education activities in their service areas. These programs educate persons who may be at risk

for HIV infection and promote awareness in the general public. The community-based organizations are in Kansas City, Topeka and Wichita. They conduct HIV education programs that target racial and ethnic minorities and injection-drug users.

Besides direct fiscal support, KDHE offers other forms of assistance to contractors, such as technical support, training and materials. AIDS Program staff conduct regular site visits as a means of evaluating program activities.

## Counseling and Testing

Testing for HIV antibody first became available in 1985, and facilities providing HIV counseling and testing rapidly became important access points in the prevention system for at-risk persons. That same year, KDHE began establishing such sites to educate Kansans about their risk for HIV infection.

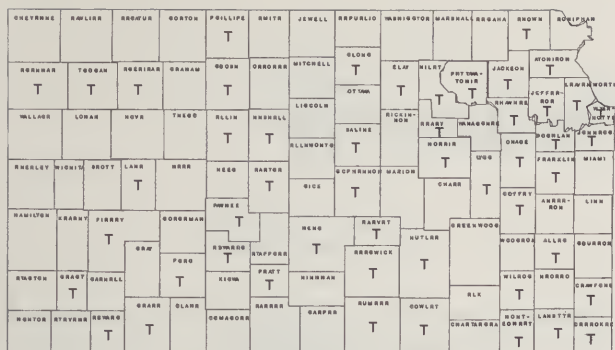
The agency currently supports 89 counseling and testing sites located at a wide variety of facilities, including 49 local health departments, 19 correctional facilities, four detention centers and two drug treatment centers. The 50 counties with public counseling and testing sites are shown in Figure 1. The sites offer services to residents of any county at fees set by the individual sites. If a fee is charged, it is on a sliding fee scale, and no one may be denied services based on an inability to pay. Under Kansas statute, sites also determine whether to operate on an anonymous (reporting to KDHE without names) or confidential (reporting to KDHE with names) basis.

Demand for HIV antibody testing has increased consistently since 1990, while federal funding to states for this service has been reduced. In the first six months of 1992, over 12,000 tests were performed, as many as during all of 1990. KDHE-supported counseling and testing personnel have worked diligently during the past several months to reduce testing of the "worried well" (persons who are not at risk for infection) in order to offer their services to at-risk persons as a means of using resources more effectively. KDHE-sup-

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T = Counseling and testing site

Figure 1. Counties with public HIV counseling and testing sites in Kansas, 1993

ported sites currently identify approximately one-third of the reported HIV cases in Kansas each year. The remaining two-thirds are reported through private providers.

### Alcohol and Drug Treatment

KDHE collaborates closely with the Alcohol and Drug Abuse Services (ADAS) of the Department of Social and Rehabilitation Services to coordinate programming and provide technical assistance. The two agencies have developed a written agreement to establish HIV counseling and testing sites in drug treatment centers. In 1992, KDHE began contracting with ADAS to provide a substance abuse counselor on-site at the Topeka-Shawnee County Health Department. This counselor refers self-identified substance-using clients of clinics at the health department, including the HIV and STD clinics, to local drug treatment programs. A substance abuse counselor is also being provided with ADAS funds to provide drug treatment referrals to clients of the Wyandotte County Health Department in Kansas City, Kansas. A similar program, although without ADAS support, is offered by the Wichita-Sedgwick County Health Department.

### Partner Notification

Another service available through the AIDS Program helps HIV-infected persons who request the service to notify sexual and needle-sharing contacts of possible exposure to the virus. Partner notification, though funded through the AIDS Program, is conducted by disease intervention specialists housed in the Sexually Transmitted Disease Program of KDHE.

Although it is sometimes difficult to reach agreement among AIDS service providers, the one point of consensus seems to be that the most

beneficial services are those that are provided early in the course of infection. This is because of: 1) growing scientific evidence that early diagnosis and medical intervention may slow progression to AIDS; and 2) the need to promote and sustain behavior change in infected persons to prevent further spread of the virus to uninfected partners.

### Case Management

KDHE contracts with community-based organizations in Johnson, Sedgwick, Shawnee and Wyandotte counties to provide case management for HIV-infected persons and their significant others. These services include partner notification, counseling, medical care, and referral to entitlement programs (i.e. Social Security and Medicaid), support groups, and alcohol and drug treatment.

HIV-positive persons identified at the local health departments in these four counties are offered early intervention services. Clients entering the early intervention program are linked with a health care facility in their area that offers basic diagnostic services, family planning, pneumonia and influenza vaccines, and referral to other medical and social services as needed.

### Special Programs

Federal funding appropriated under Title II of the Comprehensive AIDS Resources Emergency Act of 1990 (also known as the Ryan White Act) supports three services for HIV-infected individuals. The HIV/AIDS Drug Reimbursement Program provides reimbursement for antiretroviral therapy, prophylaxis for *Pneumocystis carinii* pneumonia, and other limited medications for financially needy individuals. The AIDS Home Health Program offers in-home health care services for persons needing care outside of an institutional setting. The Health Insurance Continuation Program is available for eligible HIV-disabled individuals who are unable to pay for their monthly private health care premiums. Persons enrolled in these programs must meet certain eligibility requirements. The number of persons who can be served by the programs is limited by the size of the federal grant awarded to Kansas.

Although most health care workers are unaware of it, physicians play an important role in funding these services. The allocation of federal funds to Kansas is based on the number of AIDS cases reported to KDHE. It is estimated that each unreported case of AIDS costs the state as much as \$1,200 in funds that would otherwise be available to provide assistance to patients.

# Coping with AIDS: A Cognitive Therapy Perspective

BRUCE S. LIESE, Ph.D.,\* *Kansas City*

**A**cquired immune deficiency syndrome (AIDS) was first identified in 1981. Since that time, almost a quarter of a million Americans have been diagnosed with AIDS and approximately 112,000 have died of the disease (CDC, 1992). According to Kelly and Murphy (1992), "HIV/AIDS is the most serious infectious disease epidemic of modern times, worldwide in scope and devastating to individuals, communities, and developing countries most affected by it" (p. 582).

An individual diagnosed with an HIV infection or AIDS may be at risk for psychological or emotional problems, including depression, suicidal ideation, suicide attempts, anxiety, and somatic complaints (Kelly & Murphy, 1992). The families of infected individuals may also be emotionally affected by this diagnosis. In fact, Kelly and Murphy report that "distress in family members and significant others has been found to be as high as in HIV-infected persons" (p. 580).

The purpose of this paper is to discuss the psychological coping processes associated with the diagnosis of AIDS/HIV infection. Cognitive therapy (CT) is presented as a useful model for understanding and addressing these processes.

## Overview of Cognitive Therapy

Cognitive therapy (Beck, 1976; Beck, Rush, Shaw & Emery, 1979) is an approach to counseling and psychotherapy which is active, directive, time-limited, structured, and practical. These features make CT an ideal model for physicians who wish to counsel their patients in an efficient manner. In addition to counseling techniques, CT provides a comprehensive, logical, straightforward personality theory for understanding psychological functioning.

According to cognitive therapy, individuals' emotional, behavioral, and physiologic reactions are mediated by their basic beliefs and automatic

thoughts (see Figure 1). In CT it is understood that people develop *basic beliefs* early in life. When these basic beliefs are activated by *critical incidents*, the resulting *automatic thoughts* determine individuals' *behaviors*, *emotions*, and *physiologic responses*. (Automatic thoughts are simply brief, spontaneous, abbreviated versions of basic beliefs.)

According to this model, individuals raised in critical, antagonistic, abusive homes might develop such global, negative, maladaptive basic beliefs as "I am not lovable" or "I am not adequate." These beliefs might contribute to depression, anxiety, substance abuse, and other psychiatric problems. Alternatively, individuals from loving, nurturant, supportive homes would be more likely to believe "I am lovable" and "I am adequate." These individuals would be much less likely to have psychiatric problems.

A person's negative basic beliefs might remain dormant until a critical incident occurs in his or her life. For example, an individual from an abusive home might not encounter clinical depression or anxiety until he or she experiences a divorce, loss of a job, or similar stressor. In response to such a situation this person might think: "I am a failure!" or "Nothing I do is ever right!"

It has been established that coping responses to a diagnosis of AIDS/HIV vary significantly, depending on an individual's pre-morbid level of psychological functioning (Kelly & Murphy, 1992). In terms of the CT model, a diagnosis of AIDS/HIV is viewed as a critical incident which may activate basic beliefs. Thus, an individual who has basic beliefs such as "I am generally a good, worthy person" is less likely to have a psychiatric disorder triggered by a diagnosis of AIDS/HIV. In contrast, an individual who believes "I am basically bad and unworthy" (i.e., an individual with "poor self-esteem") is more likely to have psychiatric symptoms.

It is extremely important to note here that all people have some basic self-doubts and fears about illness and death. Thus, a person diagnosed with AIDS will inevitably have *some* negative basic

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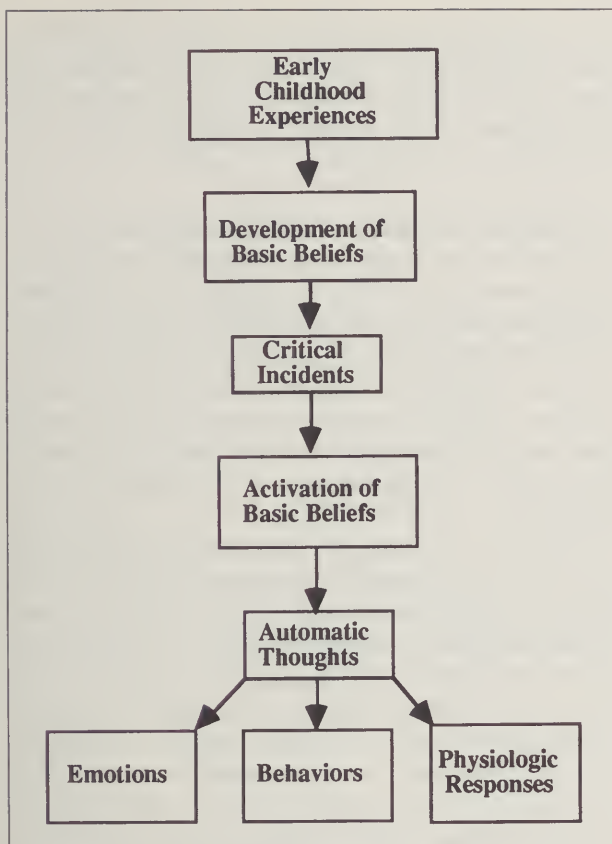


Figure 1. The cognitive model.

beliefs and automatic thoughts activated by this diagnosis (e.g., "I am likely to die" or "I may be abandoned by others"). In fact, *some* negative beliefs are likely to be rational and objective. Therefore *some* fear, anxiety, confusion and despair are certainly predictable with a diagnosis of AIDS/HIV.

### Cognitive Therapy and the Person with AIDS/HIV

The goal of CT is to help individuals develop objective, healthy thinking processes, which should result in adaptive feelings and behaviors. The components of effective CT are: physician-patient collaboration, an accurate case conceptualization, and the appropriate selection and application of cognitive and behavioral techniques.

**Collaboration.** An essential component of CT is collaboration between physician and patient. The collaborative relationship requires certain physician characteristics, including: warmth, accurate empathy, and unconditional positive regard. *Warmth* is defined as the genuine, sincere, and spontaneous expression of interest and caring. *Accurate empathy* is defined as the precise

understanding of a patient's "inner reality." In other words, accurate empathy is the ability to see the world from the patient's perspective. *Unconditional positive regard* is defined as the acceptance of the patient, regardless of his or her lifestyle, sexual orientation, beliefs, or behaviors.

Collaboration requires the active participation of both physician and patient in the medical decision-making process. Collaboration includes open communication and respect for each other's ideas, views, opinions, and choices. In fact, collaboration is greatly facilitated by the physician's *active listening*. Active listening requires the use of open-ended questions and reflection by the physician. Examples of *open-ended questions* include: "How do you feel about your diagnosis?" "What are your thoughts about your illness?" and "How does your illness affect your relationship(s)?" Examples of *reflections* include: "I can see that you are really struggling with this diagnosis"; "You seem to really want reassurance right now"; and "You seem surprisingly calm about your diagnosis."

**Case Conceptualization.** Another essential component of CT is the formulation of a case conceptualization (i.e., the development of an accurate, comprehensive understanding of the patient). The case conceptualization consists of at least three important steps: the establishment of a DSM-III-R (APA, 1987) diagnosis, developmental profile, and cognitive profile.

The DSM-III-R provides a multiaxial system of psychiatric diagnosis. Two axes in particular, Axes I and II, are important in the case conceptualization. Axis I is used to diagnose acute psychiatric syndromes (e.g., major depressive episode, panic disorder, adjustment disorder). Personality disorders (e.g., dependent, avoidant, borderline, antisocial, etc.) are diagnosed on Axis II. Personality disorders are defined as inflexible and maladaptive patterns of functioning which are chronic and long-standing, causing impairment or subjective distress.

It is important to assess carefully the existence of a DSM-III-R disorder in order to understand it accurately and treat the patient. As mentioned previously, some degree of emotional distress is inevitable with a diagnosis of AIDS/HIV. The diagnostic criteria of DSM-III-R enable the physician to distinguish between a "normal" and "pathological" response to this diagnosis. In particular, it is useful to determine whether the patient may have had a pre-existing psychiatric disorder prior to the diagnosis.

The developmental profile involves the collection of data about the patient's history (e.g., family, social, vocational, economic, etc.) as it relates to his or her current psychological status. An excellent format for phrasing developmental questions is: "What messages have you received from others about \_\_\_\_\_?" The reason for asking about "messages" is that such messages determine the patient's current thought processes. Thus, if the patient appears ashamed about sexual orientation, the physician might ask: "What messages have you received about your sexuality from your family, friends, etc.?" If the patient seems clinically depressed, the physician might ask: "What messages have you received about your self-worth as a child?" If the patient feels terrified about the prospect of dying, the physician might ask: "What messages have you received in your life about death and dying?"

The cognitive profile involves the collection of data about the patient's thought processes, especially as they relate to the cognitive therapy model (i.e., the Figure, above). In particular, the physician is encouraged to ask such questions as: "What are your thoughts about yourself, generally?" "How would you describe your self-esteem, presently?" "What types of situations (i.e., critical incidents) tend to make you feel upset?" "When you are upset, how do you cope (i.e., react behaviorally)?"

Upon ascertaining a diagnosis, developmental profile, and cognitive profile, the physician can begin to integrate this information and have a greater understanding of the patient's current functioning. In fact, the physician is encouraged to summarize the case conceptualization with the patient, in order to provide him with a greater understanding of his functioning. The following summary offered by a physician to his patient, Jim, is presented to illustrate this process. (Jim was diagnosed with AIDS three weeks ago.)

Jim, we have been talking about your illness for the past few visits, and I would like to share my impressions. First, you are certainly depressed at this time. However, from what you've said, your depression is not exclusively related to your diagnosis. Apparently, you have had problems with depression for the past few years. I understand that in your childhood you repeatedly heard that you were inadequate. In fact, you can remember your father calling you names like "sissy" and "stupid." It is apparent that these messages have had a long-term negative impact on you. In fact, you now tend to use these labels on yourself, which has generally led to feelings of helplessness and despair. So now that you have been diagnosed with this illness, you are particularly prone to depression. I would like you to spend some more time with me, discussing strategies to treat your depression.

By sharing this formulation with Jim, the physician conveys a great deal of interest in him; Jim has a more comprehensive and integrated view of his own emotional distress; and the physician tests his hypotheses about Jim.

### Cognitive and Behavioral Techniques

Cognitive and behavioral techniques are strategies used to modify patients' maladaptive thoughts, feelings and behaviors. There are hundreds of cognitive and behavioral techniques associated with CT; however, due to space limitations, only three techniques are briefly summarized here: the Socratic method, the three-question technique, and the weekly activity schedule.

The *Socratic method*, also known as guided discovery, is an approach to interviewing the patient which enables the patient to gain insight and understanding regarding the patient's psychological processes. This method of interviewing requires that the physician ask open-ended, thoughtful, exploratory questions of the patient. The physician also reflects (i.e., paraphrases) what the patient says, both verbally and non-verbally. These two techniques (open-ended questions and reflection) allow the patient to gain a more objective, adaptive perspective on his problems.

The following dialogue between Jim and his physician occurs during a follow-up office visit one week after the physician has presented the summary above. This dialogue is presented to illustrate the Socratic method. (The techniques of open-ended questioning and reflection are noted in parentheses.)

- Dr.: How are you feeling today? (open question)  
 Jim: Pretty depressed.  
 Dr.: You seem quite sad. (reflection) What have you been thinking about? (open question)  
 Jim: My life seems wasted at this point.  
 Dr.: What do you mean by "wasted"? (open question)  
 Jim: It seems like nothing matters anymore.  
 Dr.: "Nothing"? (reflection) What mattered to you *prior* to your diagnosis? (open question)  
 Jim: Well, my friends were certainly important.  
 Dr.: And how do you feel about them now? (open question)  
 Jim: I guess they still matter.  
 Dr.: You "guess"? (reflection)  
 Jim: Yeah. It's hard to think about my friends right now.  
 Dr.: When you *do* think about the friends who have made you happy in the past, how do you *feel*? (open question)  
 Jim: Well, I guess it's better than thinking about death and dying.  
 Dr.: But how does it make you *feel*? (open question)  
 Jim: Somewhat safer and less upset.



In this dialogue, the physician has helped Jim to feel emotional relief, simply by guiding him to think about friendships, rather than death. In reality, the physician may be tempted to advise and reassure the patient, in order to provide "instant relief." However, the use of the Socratic method (including open-ended questions and reflection) will facilitate the patient's ability to discover his *own* positive thoughts, resources, and strengths.

The *three-question technique* is a specific form of the Socratic method. In the three-question technique, the physician asks a series of three open-ended questions in order to help the patient revise his or her negative thinking. Again, it is often tempting for the physician to reassure and advise the patient of ways to feel better; however, advice and reassurance are typically ineffective. The three questions tend to help the patient discover, for himself, reasons for feeling better. Thus, after it is determined that the patient has a negative, distorted thought, the physician might ask: (1) What *evidence* do you have for that thought? (2) *How else* can you look at the situation? (3) If the thought is true, what are the *implications*?

For an illustration of the three-question technique, consider the following continuation of the above dialogue between Jim and his physician.

- Dr.: Jim, you told me a few minutes ago that some people will scorn you when they learn about your illness. (reflection) What is your *evidence* for this belief?
- Jim: I don't have any evidence. I just feel that way.
- Dr.: You "just feel that way." (reflection) *How else* could you look at the situation?
- Jim: I guess my real friends wouldn't abandon me.
- Dr.: If some people did, in fact, abandon you, what would the *implications* be?
- Jim: I guess it would be tolerable, as long as my real friends didn't abandon me.

In this very brief interaction, Jim's physician helps him to become more objective about the impact of his illness on his social relationships. In fact, when Jim realizes that his "real friends" won't abandon him, he feels emotional relief.

The *weekly activity schedule* is a behavioral method for helping a patient with AIDS/HIV. Specifically, the physician has the patient keep an hour-by-hour record of activities for the specified period of time. At the end of that time, they review the patient's activities, with attention paid to those which improve or exacerbate the patient's emotional distress. Again, consider a dialogue which takes place between Jim and his physician.

- Dr.: Hi, Jim! How did you do on your homework? (open question)
- Jim: Fine, Doc. Here is my calendar for the week. [They both look at Jim's completed weekly activity schedule.]
- Dr.: What did you learn from this schedule? (open question)
- Jim: I learned that I've really isolated myself since my diagnosis.
- Dr.: You've "isolated" yourself. (reflection) What do you mean by that? (open question)
- Jim: I just don't do any of the fun things I used to do.
- Dr.: Like what? (open question)
- Jim: Like being with my friends.
- Dr.: What's keeping you from doing those things now? (open question)
- Jim: Only myself, I guess.
- Dr.: What do you mean by "only myself"? (open question)
- Jim: I guess I could still do all of that stuff.
- Dr.: And if you did, how would you feel? (open question)
- Jim: Better, I'm sure.
- Dr.: So how can you begin to stop isolating yourself? (open question)
- Jim: By making some plans.
- Dr.: Okay, let's try that. Let's start with a new weekly activity schedule. [The physician takes a blank piece of paper out of his drawer.]

Upon gaining a better understanding of his current activities, the physician and patient collaboratively plan a more self-enhancing schedule for Jim. As homework, Jim continues to monitor his activities, and they review the schedule in follow-up visits.

These cognitive-behavioral techniques are most effective when they are used in conjunction with each other. In fact, the Socratic method of interviewing is vital to the success of most other cognitive strategies. Unfortunately, space limitations prohibit extensive review of these techniques. For a more detailed presentation of these, see Beck et al. (1979).

## Conclusion

The purpose of this paper has been to present a model for understanding the coping responses of the person with AIDS/HIV. Several interventions have been presented for physicians interested in addressing these issues. It is hoped that the model and techniques are applied in ways which are helpful to both physician and patient. In fact, when applied properly, the ideas contained herein have been found to be quite useful in treating a wide variety of psychosocial problems.

(Continued on page 84.)

# Screening for Breast Cancer: Kansas, 1992

**A**pproximately one woman in every ten will develop breast cancer at some time in her life. Over 1,600 cases were reported in Kansas during 1992. Breast cancer is second only to lung cancer as the leading cause of death from cancer among females in this state. A total of 420 women died from the disease in Kansas in 1991.

Efforts to prevent mortality from breast cancer have focused on self-examination, clinical examination by a health care provider, and mammography. Although screening has been shown to reduce breast cancer mortality, many women do not receive clinical breast examination and mammography as part of their routine medical care, as recommended by the American Cancer Society (Table 1).

The 1992 Kansas Behavioral Risk Factor Survey collected data on how well the breast screening recommendations of the American Cancer Society were being implemented among older women in Kansas. In the survey, a random sample of 438 women  $\geq 40$  years of age were interviewed by telephone. Eighty-six percent of the women had had a clinical examination of the breast at some time. Sixty-one percent had received a clinical breast examination during the preceding year, as recommended by the American Cancer Society.

Seventy-one percent of women in the survey had had at least one mammogram. For women 40 to 49 years of age, 65% had received a mammogram during the preceding two years, as recommended by the American Cancer Society. For women  $\geq 50$  years of age, 48% had received a mammogram during the previous year, as recommended by the American Cancer Society.

The national objective for the United States for the year 2000 is to reduce breast cancer deaths to no more than 20.6 per 100,000 women. This is a 10% reduction from the national baseline of 22.9 deaths per 100,000 in 1987. In order for Kansas to meet this objective, there will need to be increased efforts to screen all women  $\geq 40$  years of age. It is evident from the 1992 Behavioral Risk Factor Survey that only one-half to two-thirds of women in Kansas are being screened appropriately for breast cancer.

TABLE I  
AMERICAN CANCER SOCIETY  
RECOMMENDATIONS FOR BREAST CANCER  
SCREENING

---



---

Breast self-examination
• monthly for women 20 and over
Breast clinical examination
• every 3 years for women 20 to 40
• annually for women over 40
Mammography*
• every 1 to 2 years for women 40 to 49
• annually for women 50 and over

---

\*Screening mammography should begin by age 40.

---

Previous studies have shown that the use of mammography is strongly influenced by a physician's recommendation. Many women are unlikely to receive a mammogram unless advised to do so by their personal physician. Doctors who provide health care to women should be sure their patients are aware of the national recommendations for breast cancer screening, and that physical examinations and mammography are scheduled as recommended by the American Cancer Society.

Reported by: Office of Chronic Disease and Health Promotion and Bureau of Disease Control, Kansas Department of Health and Environment.

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## COPING WITH AIDS

(Continued from page 83.)

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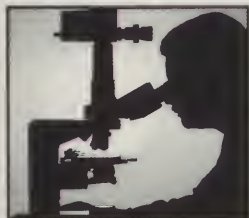
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# Aggressive Heparin Therapy for DVT

DONALD L. VINE, M.D.,\* *Wichita*

**A** growing concern about anticoagulant therapy for deep-vein thromboembolism is that a cautious approach to treatment will leave too many patients under-anticoagulated during the first 24 hours. Caution stems from the fear that an overly aggressive approach might lead to an increased incidence of bleeding complications.

These concerns are addressed by two reports of a study by Hull and coworker in which 199 consecutive patients with venographically documented proximal vein thrombosis were randomized to receive one of two anticoagulant regimens.<sup>1,2</sup>

## Anticoagulation

The conventional group of 100 patients received heparin for 10 days with warfarin beginning on day five. The aggressive group received heparin for five days with warfarin beginning on the first day.

All patients received a heparin bolus of 5,000 units. The initial heparin infusion provided for 40,000 units during the first 24 hours to patients with low risk of bleeding and 30,000 units to patients with increased bleeding risk, i.e., recent surgery, history of internal bleeding or stroke, or platelet count less than  $150 \times 10^9/L$ .

Heparin therapy was monitored by a nomogram adjusted to maintain the APTT between 55 and 85 seconds, which appear to have been the values associated with heparin concentrations of 0.2 to 0.4 U/mL by protamine titration in the author's laboratory. APTT values were determined every four to six hours for two determinations, then by nomogram for the remaining portion of the first 24 hours, then daily. Adjustments to infusion rates were made in increments or decrements of 120 and 240 U/hour according to the nomogram. Warfarin dosage was adjusted to maintain an international normalized ratio (INR) of 2.0 to 3.0. Patients were allowed to ambulate when the APTT was therapeutic.

\*Associate Professor, Department of Medicine, University of Kansas School of Medicine-Wichita

Address correspondence to Dr. Vine, Department of Medicine, UKSM-W, 1010 N. Kansas, Wichita, KS 67214.

## Efficacy

Subtherapeutic values persisting for more than 24 hours occurred in less than 3 percent of all patients. Supratherapeutic values persisting for more than 24 hours occurred more frequently among the aggressively managed patients (69%) than the conservatively managed (24%).

## Recurrent Events

Recurrent venous thromboembolic events occurred in 7% of each group. None occurred earlier than day 17, and six were associated with a PT INR of less than 2.0. There was one pulmonary embolism.

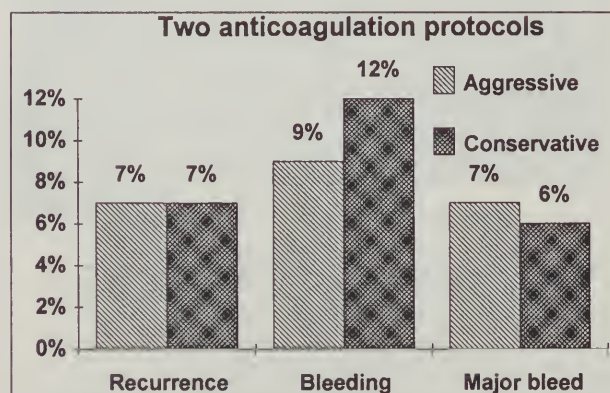
## Bleeding

Bleeding complications during initial heparin treatment occurred in 12% of the conservatively managed and 9% of the aggressively managed patients ( $p = NS$ ). The difference in major bleeding (6 and 7%) was also insignificant.

All but one major bleeding episode occurred among patients identified prior to randomization as having increased bleeding risk, and there was again no difference between aggressive (11%) and conservative (10%) protocols.

Bleeding was no more likely to occur among patients with supratherapeutic APTT levels (8%) than among patients with nonsupratherapeutic values (12%), nor did major bleeding differ significantly between groups (3% vs. 9%).

*(Continued on next page.)*



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**Action:** Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalamic centers and release of posterior pituitary hormone.

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it; however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

**Indications:** Yocon<sup>®</sup> is indicated as a sympatholytic and mydriatic. It may have activity as an aphrodisiac.

**Contraindications:** Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

**Warning:** Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

**Adverse Reactions:** Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.<sup>1,2</sup> Also dizziness, headache, skin flushing reported when used orally.<sup>1,3</sup>

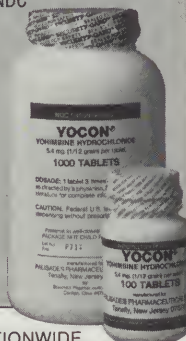
**Dosage and Administration:** Experimental dosage reported in treatment of erectile impotence.<sup>1,3,4</sup> 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to 1/2 tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.<sup>3</sup>

**How Supplied:** Oral tablets of Yocon<sup>®</sup> 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.

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## Conclusions

For patients with documented proximal deep vein thrombosis, the risk of bleeding does not appear to be related to the level (within the limits of this study) of anticoagulation. The benefits of an aggressive and more cost-effective approach of beginning warfarin with the initial bolus of heparin are similar to those of pretreatment with heparin alone, and the patient can begin moving about and presumably be discharged sooner.

The major caution might be with patients at increased bleeding risk, such as early postoperative individuals.

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## PRESIDENT'S MESSAGE

(Continued from page 73.)

of the Medical Center's predicament, which perhaps would permit the Medical Center to become more independent of the state bureaucracy and allow them to use their own earned monies more wisely. KMS needs to talk with the Regents to ask them to help reorganize the medical school and hospital to make them more independent.

The Medical Center is a vital asset to the State of Kansas and the Kansas Medical Society. If the faculty foundations were forced into bankruptcy, jeopardizing the viability of the medical school, it would be a severe blow to Kansas medicine, and would have a long-term negative impact on the availability of physicians for our state. There are rumors coming out of Washington about Hillary Rodham Clinton's Task Force on Health Care Reform that may lead to further cuts in medical school reimbursement. This means KUMC needs more of our help now and in the future. We only hope our efforts can lead to increased cooperation and coordination among the Chancellor, Vice Chancellor, the Medical Center leadership, the foundations and the hospital administration for improved medical education, research and patient care.

*Richard M. Erdinger*



## PRAVACHOL® (Pravastatin Sodium Tablets)

### CONTRAINDICATIONS

Hypersensitivity to any component of this medication.

Active liver disease or unexplained, persistent elevations in liver function tests (see WARNINGS).

**Pregnancy and lactation.** Atherosclerosis is a chronic process and discontinuation of lipid-lowering drugs during pregnancy should have little impact on the outcome of long-term therapy of primary hypercholesterolemia. Cholesterol and other products of cholesterol biosynthesis are essential components for fetal development (including synthesis of steroids and cell membranes). Since HMG-CoA reductase inhibitors decrease cholesterol synthesis and possibly the synthesis of other biologically active substances derived from cholesterol, they may cause fetal harm when administered to pregnant women. Therefore, HMG-CoA reductase inhibitors are contraindicated during pregnancy and in nursing mothers. **Pravastatin should be administered to women of child-bearing age only when such patients are highly unlikely to conceive and have been informed of the potential hazards.** If the patient becomes pregnant while taking this class of drug, therapy should be discontinued and the patient apprised of the potential hazard to the fetus.

### WARNINGS

**Liver Enzymes:** HMG-CoA reductase inhibitors, like some other lipid-lowering therapies, have been associated with biochemical abnormalities of liver function. Increases of serum transaminase (ALT, AST) values to more than 3 times the upper limit of normal occurring on 2 or more (not necessarily sequential) occasions have been reported in 1.3% of patients treated with pravastatin in the U.S. over an average period of 18 months. These abnormalities were not associated with cholestasis and did not appear to be related to treatment duration. In those patients in whom these abnormalities were believed to be related to pravastatin and who were discontinued from therapy, the transaminase levels usually fell slowly to pretreatment levels. These biochemical findings are usually asymptomatic although worldwide experience indicates that anorexia, weakness, and/or abdominal pain may also be present in rare patients.

As with other lipid-lowering agents, liver function tests should be performed during therapy with pravastatin. Serum aminotransferases, including ALT (SGPT), should be monitored before treatment begins, every six weeks for the first three months, every eight weeks during the remainder of the first year, and periodically thereafter (e.g., at about six-month intervals). Special attention should be given to patients who develop increased transaminase levels. Liver function tests should be repeated to confirm an elevation and subsequently monitored at more frequent intervals. If increases in AST and ALT equal or exceed three times the upper limit of normal and persist, then therapy should be discontinued. Persistence of significant aminotransferase elevations following discontinuation of therapy may warrant consideration of liver biopsy.

Active liver disease or unexplained transaminase elevations are contraindications to the use of pravastatin (see CONTRAINDICATIONS). Caution should be exercised when pravastatin is administered to patients with a history of liver disease or heavy alcohol ingestion (see CLINICAL PHARMACOLOGY: Pharmacokinetics/Metabolism). Such patients should be closely monitored, started at the lower end of the recommended dosing range, and titrated to the desired therapeutic effect.

**Skeletal Muscle:** Rhabdomyolysis with renal dysfunction secondary to myoglobinuria has been reported with pravastatin and other drugs in this class. Uncomplicated myalgia has also been reported in pravastatin-treated patients (see ADVERSE REACTIONS). Myopathy, defined as muscle aching or muscle weakness in conjunction with increases in creatine phosphokinase (CPK) values to greater than 10 times the upper limit of normal was reported to be possibly due to pravastatin in only one patient in clinical trials (<0.1%). Myopathy should be considered in any patient with diffuse myalgias, muscle tenderness or weakness, and/or marked elevation of CPK. Patients should be advised to report promptly unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever. **Pravastatin therapy should be discontinued if markedly elevated CPK levels occur or myopathy is diagnosed or suspected. Pravastatin therapy should also be temporarily withheld in any patient experiencing an acute or serious condition predisposing to the development of renal failure secondary to rhabdomyolysis, e.g., sepsis; hypotension; major surgery; trauma; severe metabolic, endocrine, or electrolyte disorders; or uncontrolled epilepsy.**

The risk of myopathy during treatment with lovastatin is increased if therapy with either cyclosporine, gemfibrozil, erythromycin, or niacin is administered concurrently. There is no experience with the use of pravastatin together with cyclosporine. Myopathy has not been observed in clinical trials involving small numbers of patients who were treated with pravastatin together with niacin. One trial of limited size involving combined therapy with pravastatin and gemfibrozil showed a trend toward more frequent CPK elevations and patient withdrawals due to musculoskeletal symptoms in the group receiving combined treatment as compared with the groups receiving placebo, gemfibrozil, or pravastatin monotherapy. Myopathy was not reported in this trial (see PRECAUTIONS: Drug Interactions). One patient developed myopathy when diltiazem was added to a previously well tolerated regimen of pravastatin; the myopathy resolved when diltiazem therapy was stopped and pravastatin treatment continued. **The use of fibrates alone may occasionally be associated with myopathy. The combined use of pravastatin and fibrates should generally be avoided.**

### PRECAUTIONS

**General:** Pravastatin may elevate creatine phosphokinase and transaminase levels (see ADVERSE REACTIONS). This should be considered in the differential diagnosis of chest pain in a patient on therapy with pravastatin.

**Homozygous Familial Hypercholesterolemia.** Pravastatin has not been evaluated in patients with rare homozygous familial hypercholesterolemia. In this group of patients, it has been reported that HMG-CoA reductase inhibitors are less effective because the patients lack functional LDL receptors.

**Renal Insufficiency:** A single 20 mg oral dose of pravastatin was administered to 24 patients with varying degrees of renal impairment (as determined by creatinine clearance). No effect was observed on the pharmacokinetics of pravastatin or its 3 $\alpha$ -hydroxy isomeric metabolite (SQ 31,906). A small increase was seen in mean AUC values and half-life (t<sub>1/2</sub>) for the inactive enzymatic ring hydroxylation metabolite (SQ 31,945). Given the small sample size, the dosage administered, and the degree of individual variability, patients with renal impairment who are receiving pravastatin should be closely monitored.

**Information for Patients:** Patients should be advised to report promptly unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever.

**Drug Interactions:** **Immunosuppressive Drugs, Gemfibrozil, Niacin (Nicotinic Acid), Erythromycin:** See WARNINGS: Skeletal Muscle.

**Antipyrene:** Clearance by the cytochrome P450 system was unaltered by concomitant administration of pravastatin. Since pravastatin does not appear to induce hepatic drug-metabolizing enzymes, it is not expected that any significant interaction of pravastatin with other drugs (e.g., phenytoin, quinidine) metabolized by the cytochrome P450 system will occur.

**Cholestyramine/Colestipol:** Concomitant administration resulted in an approximately 40 to 50% decrease in the mean AUC of pravastatin. However, when pravastatin was administered 1 hour before or 4 hours after cholestyramine or 1 hour before colestipol and a standard meal, there was no clinically significant decrease in bioavailability or therapeutic effect. (see DOSAGE AND ADMINISTRATION: Concomitant Therapy.)

**Warfarin:** In a study involving 10 healthy male subjects given pravastatin and warfarin concomitantly for 6 days, bioavailability parameters at steady state for pravastatin (parent compound) were not altered. Pravastatin did not alter the plasma protein-binding of warfarin. Concomitant dosing did increase the AUC and C<sub>max</sub> of warfarin but did not produce any changes in its anticoagulant action (i.e., no increase was seen in mean prothrombin time after 6 days of concomitant therapy). However, bleeding and extreme prolongation of prothrombin time has been reported with another drug in this class. Patients receiving warfarin-type anticoagulants should have their prothrombin times closely monitored when pravastatin is initiated or the dosage of pravastatin is changed.

**Cimetidine:** The AUC<sub>0-12h</sub> for pravastatin when given with cimetidine was not significantly different from the AUC for pravastatin when given alone. A significant difference was observed between the AUC's for pravastatin when given with cimetidine compared to when administered with antacid.

**Digoxin:** In a crossover trial involving 18 healthy male subjects given pravastatin and digoxin concurrently for 9 days, the bioavailability parameters of digoxin were not affected. The AUC of pravastatin tended to increase, but the overall bioavailability of pravastatin plus its metabolites SQ 31,906 and SQ 31,945 was not altered.

**Gemfibrozil:** In a crossover study in 20 healthy male volunteers given concomitant single doses of pravastatin and gemfibrozil, there was a significant decrease in urinary excretion and protein binding of pravastatin. In addition, there was a significant increase in AUC, C<sub>max</sub>, and T<sub>max</sub> for the pravastatin metabolite SQ 31,906. Combination therapy with pravastatin and gemfibrozil is generally not recommended.

In interaction studies with aspirin, antacids (1 hour prior to PRAVACHOL), cimetidine, nicotinic acid, or probucol, no statistically significant differences in bioavailability were seen when PRAVACHOL (pravastatin sodium) was administered.

**Other Drugs:** During clinical trials, no noticeable drug interactions were reported when PRAVACHOL was added to: diuretics, antihypertensives, digitalis, converting-enzyme inhibitors, calcium channel blockers, beta-blockers, or nitroglycerin.

**Endocrine Function:** HMG-CoA reductase inhibitors interfere with cholesterol synthesis and lower circulating cholesterol levels and, as such, might theoretically blunt adrenal or gonadal steroid hormone production. Results of clinical trials with pravastatin in males and post-menopausal females were inconsistent with regard to possible effects of the drug on basal steroid hormone levels. In a study of 21 males, the mean testosterone response to human chorionic gonadotropin was significantly reduced (p<0.004) after 16 weeks of treatment with 40 mg of pravastatin. However, the percentage of patients showing a  $\geq$ 50% rise in plasma testosterone after human chorionic gonadotropin stimulation did not change significantly after therapy in these patients. The effects of HMG-CoA reductase inhibitors on spermatogenesis and fertility have not been studied in adequate numbers of patients. The effects, if any, of pravastatin on the pituitary-gonadal axis in pre-menopausal females are unknown. Patients treated with pravastatin who display clinical evidence of endocrine dysfunction should be evaluated appropriately. Caution should also be exercised if an HMG-CoA reductase inhibitor or other agent used to lower cholesterol levels is administered to patients also receiving other drugs (e.g., ketoconazole, spironolactone, cimetidine) that may diminish the levels or activity of steroid hormones.

**CNS Toxicity:** CNS vascular lesions, characterized by perivascular hemorrhage and edema and mononuclear cell infiltration of perivascular spaces, were seen in dogs treated with pravastatin at a dose of 25 mg/kg/day, a dose that produced a plasma drug level about 50 times higher than the mean drug level in humans taking 40 mg/day. Similar CNS vascular lesions have been observed with several other drugs in this class.

A chemically similar drug in this class produced optic nerve degeneration (Wallerian degeneration of retinogeniculate fibers) in clinically normal dogs in a dose-dependent fashion starting at 60 mg/kg/day, a dose that produced mean plasma drug levels about 30 times higher than the mean drug level in humans taking the highest recommended dose (as measured by total enzyme inhibitory activity). This same drug also produced vestibulocochlear (Wallerian-like) degeneration and retinal ganglion cell chromatolysis in dogs treated for 14 weeks at 180 mg/kg/day, a dose which resulted in a mean plasma drug level similar to that seen with the 60 mg/kg dose.

**Carcinogenesis, Mutagenesis, Impairment of Fertility:** In a 2-year study in rats fed pravastatin at doses of 10, 30, or 100 mg/kg body weight, there was an increased incidence of hepatocellular carcinomas in males at the highest dose (p<0.01). Although rats were given up to 125 times the human dose (HD) on a mg/kg body weight basis, their serum drug levels were only 6 to 10 times higher than those measured in humans given 40 mg pravastatin as measured by AUC.

The oral administration of 10, 30, or 100 mg/kg (producing plasma drug levels approximately 0.5 to 5.0 times human drug levels at 40 mg) of pravastatin to mice for 22 months resulted in a statistically significant increase in the incidence of malignant lymphomas in treated females when all treatment groups were pooled and compared to controls (p<0.05). The incidence was not dose-related and male mice were not affected.

A chemically similar drug in this class was administered to mice for 72 weeks at 25, 100, and 400 mg/kg body weight, which resulted in mean serum drug levels approximately 3, 15, and 33 times higher than the mean human serum drug concentration (as total inhibitory activity) after a 40 mg oral dose. Liver carcinomas were significantly increased in high-dose females and mid- and high-dose males, with a maximum incidence of 90 percent in males. The incidence of adenomas of the liver was significantly increased in mid- and high-dose females. Drug treatment also significantly increased the incidence of lung adenomas in mid- and high-dose males and females. Adenomas of the eye Harderian gland (a gland of the eye of rodents) were significantly higher in high-dose mice than in controls.

No evidence of mutagenicity was observed *in vitro*, with or without rat-liver metabolic activation, in the following studies: microbial mutagen tests, using mutant strains of *Salmonella typhimurium* or *Escherichia coli*; a forward mutation assay in L5178Y TK +/– mouse lymphoma cells; a chromosomal aberration test in hamster cells; and a gene conversion assay using *Saccharomyces cerevisiae*. In addition, there was no evidence of mutagenicity in either a dominant lethal test in mice or a micronucleus test in mice.

In a study in rats, with daily doses up to 500 mg/kg, pravastatin did not produce any adverse effects on fertility or general reproductive performance. However, in a study with another HMG-CoA reductase inhibitor, there was decreased fertility in male rats treated for 34 weeks at 25 mg/kg body weight, although this effect was not observed in a subsequent fertility study when this same dose was administered for 11 weeks (the entire cycle of spermatogenesis, including epididymal maturation). In rats treated with this same reductase inhibitor at 180 mg/kg/day, seminiferous tubule degeneration (necrosis and loss of spermatogenic epithelium) was observed. Although not seen with pravastatin, two similar drugs in this class caused drug-related testicular atrophy, decreased spermatogenesis, spermatocytic degeneration, and giant cell formation in dogs. The clinical significance of these findings is unclear.

**Pregnancy: Pregnancy Category X:** See CONTRAINDICATIONS.

Safety in pregnant women has not been established. Pravastatin was not teratogenic in rats at doses up to 1000 mg/kg daily or in rabbits at doses of up to 50 mg/kg daily. These doses resulted in 20x (rabbit) or 240x (rat) the human exposure based on surface area (mg/m<sup>2</sup>). However, in studies with another HMG-CoA reductase inhibitor, skeletal malformations were observed in rats and mice. PRAVACHOL (pravastatin sodium) should be administered to women of child-bearing potential only when such patients are highly unlikely to conceive and have been informed of the potential hazards. If the woman becomes pregnant while taking PRAVACHOL (pravastatin sodium), it should be discontinued and the patient advised again as to the potential hazards to the fetus.

**Nursing Mothers:** A small amount of pravastatin is excreted in human breast milk. Because of the potential for serious adverse reactions in nursing infants, women taking pravastatin should not nurse (see CONTRAINDICATIONS).

**Pediatric Use:** Safety and effectiveness in individuals less than 18 years old have not been established. Hence, treatment in patients less than 18 years old is not recommended at this time. (See also PRECAUTIONS: General.)

### ADVERSE REACTIONS

Pravastatin is generally well tolerated; adverse reactions have usually been mild and transient. In 4-month long placebo-controlled trials, 1.7% of pravastatin-treated patients and 1.2% of placebo-treated patients were discontinued from treatment because of adverse experiences attributed to study drug therapy; this difference was not statistically significant. In long-term studies, the most common reasons for discontinuation were asymptomatic serum transaminase increases and mild, non-specific gastrointestinal complaints. During clinical trials the overall incidence of adverse events in the elderly was not different from the incidence observed in younger patients.

**Adverse Clinical Events:** All adverse clinical events (regardless of attribution) reported in more than 2% of pravastatin-treated patients in the placebo-controlled trials are identified in the table below; also shown are the percentages of patients in whom these medical events were believed to be related or possibly related to the drug:

Body System/Event	All Events %		Events Attributed to Study Drug %	
	Pravastatin (N=900)	Placebo (N=411)	Pravastatin (N=900)	Placebo (N=411)
Cardiovascular				
Cardiac Chest Pain	4.0	3.4	0.1	0.0
Dermatologic				
Rash	4.0*	1.1	1.3	0.9
Gastrointestinal				
Nausea/Vomiting	7.3	7.1	2.9	3.4
Diarrhea	6.2	5.6	2.0	1.9
Abdominal Pain	5.4	6.9	2.0	3.9
Constipation	4.0	7.1	2.4	5.1
Flatulence	3.3	3.6	2.7	3.4
Heartburn	2.9	1.9	2.0	0.7
General				
Fatigue	3.8	3.4	1.9	1.0
Chest Pain	3.7	1.9	0.3	0.2
Influenza	2.4*	0.7	0.0	0.0
Musculoskeletal				
Localized Pain	10.0	9.0	0.4	1.5
Myalgia	2.7	1.0	0.6	0.0
Nervous System				
Headache	6.2	3.9	1.7*	0.2
Dizziness	3.3	3.2	1.0	0.5
Renal/Genitourinary				
Urinary Abnormality	2.4	2.9	0.7	1.2
Respiratory				
Common Cold	7.0	6.3	0.0	0.0
Rhinitis	4.0	4.1	0.1	0.0
Cough	2.6	1.7	0.1	0.0

\*Statistically significantly different from placebo.

The following effects have been reported with drugs in this class:

**Skeletal:** myopathy, rhabdomyolysis.

**Neurological:** dysfunction of certain cranial nerves (including alteration of taste, impairment of extra-ocular movement, facial paresis), tremor, vertigo, memory loss, paresthesia, peripheral neuropathy, peripheral nerve palsy.

**Hypersensitivity Reactions:** An apparent hypersensitivity syndrome has been reported rarely which has included one or more of the following features: anaphylaxis, angioedema, lupus erythematosus-like syndrome, polymyalgia rheumatica, vasculitis, purpura, thrombocytopenia, leukopenia, hemolytic anemia, positive ANA, ESR increase, arthritis, arthralgia, urticaria, asthenia, photosensitivity, fever, chills, flushing, malaise, dyspnea, toxic epidermal necrolysis, erythema multiforme, including Stevens-Johnson syndrome.

**Gastrointestinal:** pancreatitis, hepatitis, including chronic active hepatitis, cholestatic jaundice, fatty change in liver, and, rarely, cirrhosis, fulminant hepatic necrosis, and hepatoma; anorexia, vomiting.

**Reproductive:** gynecostasia, loss of libido, erectile dysfunction.

**Eye:** progression of cataracts (lens opacities), ophthalmoplegia.

**Laboratory Test Abnormalities:** Increases in serum transaminase (ALT, AST) values and CPK have been observed (see WARNINGS).

Transient, asymptomatic eosinophilia has been reported. Eosinophil counts usually returned to normal despite continued therapy. Anemia, thrombocytopenia, and leukopenia have been reported with other HMG-CoA reductase inhibitors.

**Concomitant Therapy:** Pravastatin has been administered concurrently with cholestyramine, colestipol, nicotinic acid, probucol and gemfibrozil. Preliminary data suggest that the addition of either probucol or gemfibrozil to therapy with lovastatin or pravastatin is not associated with greater reduction in LDL-cholesterol than that achieved with lovastatin or pravastatin alone. No adverse reactions unique to the combination or in addition to those previously reported for each drug alone have been reported. Myopathy and rhabdomyolysis (with or without acute renal failure) have been reported when another HMG-CoA reductase inhibitor was used in combination with immunosuppressive drugs, gemfibrozil, erythromycin, or lipid-lowering doses of nicotinic acid. Concomitant therapy with HMG-CoA reductase inhibitors and these agents is generally not recommended. (See WARNINGS: Skeletal Muscle and PRECAUTIONS: Drug Interactions.)

### OVERDOSAGE

There have been no reports of overdoses with pravastatin.

Should an accidental overdose occur, treat symptomatically and institute supportive measures as required.

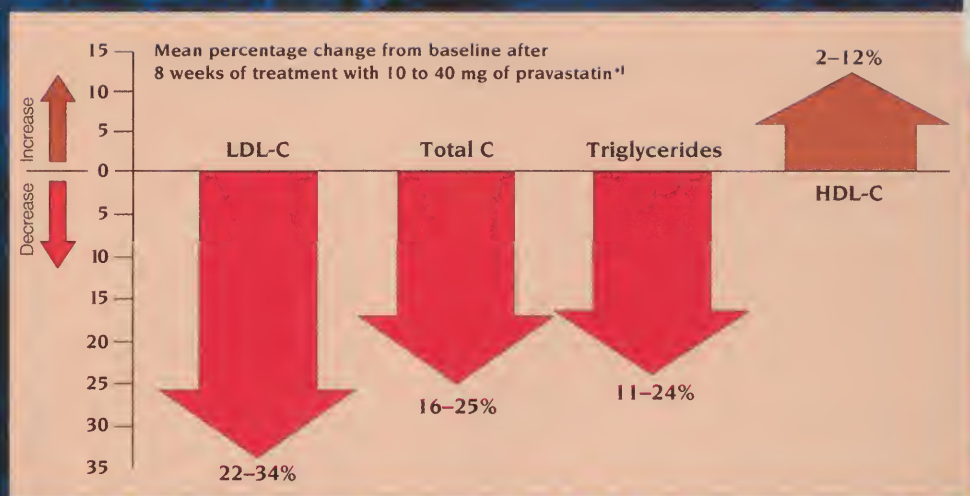






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<sup>\*</sup>Each arrow represents a range of means derived from a single placebo-controlled study that included 55 patients treated with pravastatin.

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**Reference:** 1. Jones PH, et al. Once-daily pravastatin in patients with primary hypercholesterolemia: a dose-response study. *Clin Cardiol.* 1991;14:146-151.

  
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# MEDICINE

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April 1993

Volume 94, Number 4



- Hypertension in Pregnancy
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In January 1935, a new logo appeared on the cover of KANSAS MEDICINE for the first time. This device represents two stethoscopes: the original monaural type as used by Laënnec, and the modern binaural variety. The logo was designed expressly for KANSAS MEDICINE by renowned graphic designer Bradbury Thompson, a native of Topeka and friend of two former editors of the journal, Dr. W.M. Mills and Dr. Lucien Pyle. As another former editor, Dr. Orville R. Clark, wrote in January 1955, the logo "has become as much a part of the journal as any of the features on the inside and is something which is ours alone."



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# Without a Clout

**M**any years ago, the old *Saturday Evening Post* used to run a series of stories based on a newspaper editorial office of the day. On one occasion, a terrible train wreck had occurred in a remote part of the state and the editor, recalling that they had a "stringer" in the area, wired him to cover the story. Hearing nothing from the reporter after several hours, he wired again demanding some word on the catastrophe. Some time later, the message came through: "All is confusion."



Today, if Hippocrates were to send one of his minions down to check on the medical profession, the message sent back might be of the same order. Certainly, an air of unease has pervaded the profession as its primary function, the care and healing of the sick and wounded, has been dissipated by countless social, economic, ethnic and cultural intrusions. Even as the profession claims identification with its ancient traditions and persona, it has in the last few years changed more than in any previous age — and continues to do so. The confusion relates to this day, when it has more to offer but attracts more negative attention than ever before.

There's that arrogance of presence again, claiming for ourselves some distinction our predecessors never realized. Still, the present day is bringing together a greater and continuing emergence and crossbreeding of capabilities than ever before, as fascinating disclosures in every branch of learning and application appear. It is no wonder that the term "physician" has a much broader connotation than it formerly did — even as it loses some of its luster.

Borrowing from thermodynamics, the current condition can be described as one of entropy — which, for our purpose, can be used to describe this state of confusion or disorganization (or, as it has been referred to elsewhere, chaos). The ominous nature of the description, however, can be misleading. Aside from the implications of doom it carries, it represents the potential for moving from this disorganization to an increasingly ordered (and productive) state. All we have to do is take the "raw" materials and create the new world in all its organized glory — without

a blueprint or, rather, with myriad contending blueprints promoted by a variety of interests.

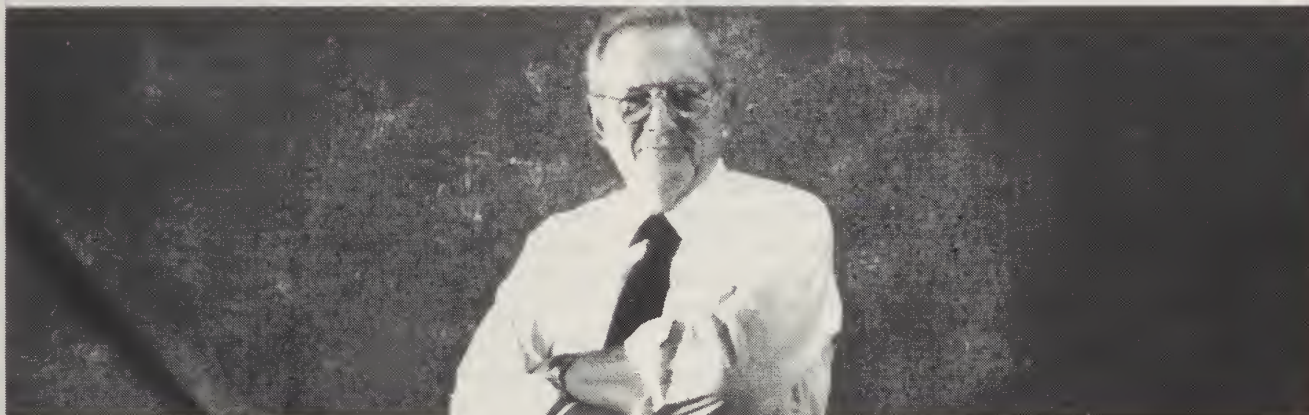
To cite one example in passing, it is apparent that the Clinton commission, charged with coming up with a solution to our medical problems, will come out with an economic, not medical, plan. It is ironic that all those changes in the variety and complexity of medical services now available have brought a Golden Age of Medicine not quite as hoped for. Rather, it produces continuing crises as means are sought to translate these advances into personal services without bankrupting the patient, the providers or the government. The secrecy of the group's meetings (initially, at least) and exclusion of organized medicine could only have been disquieting, whatever adjustments have been later applied.

It is evident that the medical profession must face up to a new place in the social and political order. In the health care decision-making going on in Washington, the organized medical profession has been told to get lost — or, as the AMA was informed, it doesn't have the clout it once did. This may meet with the tacit approval of the considerable number of physicians who, in recent years, have chosen to dissociate themselves from the organization, but they can feel no great satisfaction with this situation since it fragments the medical voice in such matters.

There is a large (and probably sincere) body of opinion in the country which places a major responsibility for the current medical situation squarely on the physicians. There was a time when the profession could evade that charge to some extent by citing the roles of the insurance companies, the hospitals and, of course, the lawyers. The direct contact with the patient gave physicians a certain hold on the patient's feelings. It appears this is diminishing. Physicians' protestations of high overhead and long training and hours have lost their impact. The altered patient contact brought on by the new order of medical services creates an unintended schism between these essentials of the medical service equation. And physicians generally, attempting to retain their feelings of traditional obligation in a different world, despite an inherent reluctance even to admit such a change, and confronted by numerous "solutions," are confused. D.E.G.



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# What a Year This Has Been!

**T**his has been a very exciting, memorable, and anything-but-boring year. It has indeed been my pleasure and honor to represent you as President of the Kansas Medical Society. I have traveled around Kansas and learned much from you about our state, our society, and our profession. It's meant quite an investment of my time and energy, but I have found it very rewarding. One goal for the year was to build bridges: between our own diverse membership and interests and those of various opposing medical factions; between medicine and the business community; and between KMS and the KU Medical Center in Kansas City. Another goal was to re-establish our relationship with the Kansas Hospital Association. We also hoped to enhance and strengthen the KMS Auxiliary. To do this, Terrie Browning traveled with us to all the council district meetings and enthusiastically participated in all the programs. We had the privilege of representing Kansas in many national and state meetings, where we tried to learn about the politics and socioeconomics of the promised "new era of change" in health care delivery and relay this back to you.



I thought it would be nice to summarize some of the highlights of the year, but I quickly discovered this is an impossible task — short of writing a novel. There were the AMA conventions in Chicago and Nashville, where I saw the AMA House of Delegates debating, negotiating, and reaching a consensus on issues that directly affect each of us. Delegates from all medical disciplines, with diverse backgrounds and interests, from all parts of the nation, had the opportunity to speak and vote on issues as varied as the representatives themselves. The final product was an agreement representative of the majority opinion, and a well defined mandate for the AMA leadership to follow.

The Kansas Medical Society is much like the AMA. It is a society organized to promote open debate on issues affecting our profession in an attempt to reach a uniform opinion derived from the input and energy of all our members. It really works if we stand together and trust and respect each other's opinion. If we do this, the Kansas Medical Society is the strongest and most power-

ful body representing the interests of our patients and defining and directing health care in our state.

I want to thank the regional councilors for helping make our visits to your areas so enjoyable. My wife, Barb, and I traveled over 8,000 miles — 6,500 miles in the air alone — to see you. We certainly learned a lot about Kansas geography, with a good look at the Flint Hills, the sand dunes around Garden City, and the Ozark-like rolling hills of southeast Kansas.

As I set out across the state, one of my goals was to find out how health care fits into the local business community and economy. To do this, I called or met with leaders from the chamber of commerce in each city we visited before we met with the local society. For example, we met with the Economic Development Committee of Great Bend. We talked about their concerns regarding health care insurance costs, tort reform, the confusion about the new Americans with Disabilities Act, and the need for industry to work with physicians and other health care providers in their economic planning. However, the most emphasized issue at every chamber meeting was workers' compensation. For example, in Topeka I was told that the premiums have gone up over 300% during the last three years, making workers' compensation insurance in Kansas twice as expensive as in California; and in Great Bend and Pittsburgh I learned that the crisis may close some businesses.

In Coffeyville and Independence, the chamber leaders told me they had taken initial steps to develop a countywide economic development plan to include the economic referral base for both cities — rather than competing with each other, as they had done in the past. This included working to develop better cooperation among the medical providers in that area and to bring them into the planning process. In Pittsburgh and Parsons, the business leaders emphasized the need to develop closer ties with physicians, and to work with them to help keep patients from "leaking" out of the area to referral centers in Missouri and Oklahoma.

Every chamber wanted to find a way to work more closely with physicians in the community, and all were very supportive of the local health care industry. They pointed out that this was frequently the largest, or nearly the largest, employer



in their area and they felt it was an important, *even vital*, ingredient in their future economic survival. They were all interested in helping with physician recruitment, and in encouraging physicians to join the chamber and participate in community affairs and economic development. Several chambers spoke highly of specific physicians in their area who had worked hard to promote the community and the chamber. They also named many physicians who were active in other areas that made their cities better.

My second goal was to try to understand the problems and difficulties of the regional hospitals, and to develop a closer liaison with the Kansas Hospital Association through the KHA-KMS Liaison Committee. As with the chambers, I would either meet with or call the hospital administrators in each district before the council district meeting. For example, in Dodge City I met with Mr. Don Kannady and had a very good discussion about EACH/PCH. In Pratt, Mr. Roland Walsh and his administrative staff waited until after 6:00 to meet with us and talk about their hospital and community. It is clear that we have some excellent hospital facilities across the state, and that the hospital administrations are very supportive of their medical staff. For the most part, they told me the medical staff were excellent supporters who took seriously their role as leaders and provided good health care for their patients.

Physician recruiting was the number-one issue in every facility. Every place needs primary care physicians, i.e., those in family practice, internal medicine and pediatrics. The next-most-requested physician was an orthopedic surgeon, followed by a general surgeon and OB/GYN. Most hospitals are working closely with their medical staff in this recruiting venture, but they also told me they have asked their local chamber of commerce to help. Many of the smaller community hospitals are supported by a tax base. In fact, over half of the 130-some Kansas community hospitals are supported to a lesser or greater degree with a mil tax. The rural communities are having more difficulty in attracting and/or retaining doctors. They are concerned about administrative regionalization of facilities and fear certificate of need legislation, which would prohibit them from making rapid economic decisions necessary for their survival.

I shared all this information about the local businesses, chamber and hospitals at the council district meetings. There were several occasions when I believe we were able to initiate meaningful

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**"I wish to challenge you . . . to maintain our high standards and our moral and ethical heritage."**

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dialogue among the physicians and these groups to work toward a solution to some problems.

To encourage more primary care education, I met with officials of the University of Kansas Medical School, the Dean and the Vice Chancellor. I even spoke with Chancellor Budig about supporting the primary care departments. To my surprise, I found the medical school faculty was in a state of economic crisis, especially in the clinical departments of internal medicine, family practice and pediatrics. [I reported on this in detail in my March President's Message.] Through the KMS-UKSM Liaison Committee, we have tried to help the faculty facilitate means of approaching some of these financial problems, and to re-establish more meaningful two-way communication between Kansas physicians and the medical school about our needs and concerns. The final result may well take some legislative initiative, but the most important initiative needs to come from each of us reaching out to the Medical School and its faculty with *our* support, both spiritual and financial, to get them through this crisis.

As I traveled around the state, perhaps the most significant benefit was making and re-establishing friendships. My wife and I are most grateful for your hospitality, and I found this a most unique and growing experience. I had the pleasure of meeting local leaders throughout Kansas, including such people as Dr. Rick Kellerman, who is building an important family practice residency program in Salina; and our own state medical poet laureate, Dr. George Bascom, of Manhattan. Dr. Bascom has published several wonderful books of poems about his feelings and experiences as a surgeon. I would encourage you to read his poems, which I believe you will find extremely meaningful.

Perhaps my fondest memory of this year will be of Terrie Browning. Her psychodrama about elder abuse is a very moving and relevant message for all of us. However, I've got to admit there was a point where I was beginning to recite that

*(Continued on page 97.)*

# Fiduciary Duties

WAYNE T. STRATTON, J.D.,\* *Topeka*

**A** fiduciary relationship is one in which a party has the duty to act primarily for another's benefit.

Kansas courts have consistently refused to set a definition of a fiduciary relationship, but have stated that a fiduciary relationship "has reference to any relationship of blood, business, friendship, or association in which one of the parties reposes special trust and confidence in the other who is in a position to have and exercise influence over the first party." The court has said it includes "a class of human relations which, by principles of common honesty, require fair dealing between the parties."

Kansas decisions indicate that there must be not only confidence between the parties, but also "a certain inequality, dependence, weakness of age, of mental strength, business intelligence, knowledge of facts involved . . . giving one an advantage over the other."

The relation does not depend on a definition created or defined by law, but it does exist where there has been a special confidence lodged in one who must act in good faith and conscience in the interests of another. A fiduciary relationship exists between such parties as an attorney and client, a cleric and member of the church, or a trustee and the beneficiary of a trust.

Case law has long recognized that aspects of the physician-patient relationship are fiducial in nature and create a duty on the part of a physician to disclose all facts within his or her expertise which may materially affect the patient's rights and interests. Such a relationship is based upon the theory that the physician is learned, skilled



and experienced in subjects of vital importance to the patient, but about which the patient knows little or nothing. Therefore, a fiduciary relationship exists.

The doctrine of informed consent establishes that a physician has a duty to his patient to disclose facts which are necessary in order for the patient to consent intelligently to the proposed treatment.

A California court recently decided a case which appears to be an extreme example of how far a court is willing to go to apply the fiduciary duty to a physician-patient relationship and extend liability for a breach of that duty. In this case, a patient underwent surgery for removal of a nonfunctioning kidney. During the surgery, a cancerous tumor was discovered in the pancreas. After consent from the patient's spouse, the tumor was removed.

The surgeon did not tell the patient that the tumor was a type that "easily spread," nor did he state that statistics indicate that only 5% of pancreatic cancer patients survive more than five years. The oncologist told the patient that there was a very significant chance the surgery had not cured the cancer and there was still a great risk for recurrence.

The patient was treated with chemotherapy and, in a questionnaire completed for the oncologist, indicated that if he were seriously ill, he would want to be told the truth about his condition.

After reviewing the pathology report, the specialist had the opinion that the patient would probably not live more than five years, but did not give the patient this information because he had not been questioned by the patient as to a specific time frame of life expectancy.

The patient was later told he was beyond cure. The patient responded, "Where do we go from here?" The doctor stated that arrangements would be made to make the patient's remaining time more comfortable. The patient waved the doctor away. The doctor met with the spouse, who did not think the patient needed to know more. The patient was discharged, admitted two weeks later and died in four days.

\*KMS Legal Counsel.

Comments appearing herein are not intended as a substitute for legal analysis or advice. Answers to legal questions depend largely upon the particular facts of a case. The reader is urged to consult an attorney for answers to specific legal questions.

These comments do not necessarily represent the views of KANSAS MEDICINE, or the Kansas Medical Society. For further information, contact Mr. Stratton, 515 S. Kansas, Topeka, KS 66603, 1-800-332-0248.



The widow and children brought suit against the oncologist for alleged breach of the fiduciary duty to make a full and fair disclosure of all facts regarding the patient's illness, including life expectancy information. They claimed if they had known of the decedent's true condition, they would have conducted personal and business affairs differently.

The majority standard, used to determine whether disclosure should be made, is also the standard used in Kansas. The standard is that of a reasonable physician. The physician has a fiduciary duty to make a reasonable disclosure to the patient regarding the nature and probable consequences of treatment. The scope of disclosure is limited to that which a reasonable physician or other health care provider under similar circumstances would have disclosed.

The standard of disclosure employed in the California case is the "patient need standard." The California court measured disclosure "by the patient's need, and that need is whatever information is material to the decision." Material information is "that which the physician knows or should know would be regarded as significant by a reasonable person in the patient's position when deciding to accept or reject the recommended medical procedure."

Since this cancer had significant side effects and an extremely low probability of treatment success, the court was especially concerned that the patient have disclosure from the doctors.

The court held that the doctor should have given the patient general information regarding the "severity and aggressiveness of the particular kind of cancer involved as reflected in mortality rates, as well as the way it usually progresses during its course; there was no way for the patient to evaluate intelligently the information provided.

"Where the patient requests the truth, the physician does not do him a favor by withholding accurate expert information." The court goes on to say that this case holding does not mean that "doctors must be heartless dispensers of death sentences."

It is not uncommon for physicians to wait to discuss life expectancy information until the question is raised by the patient. Kansas physicians should be grateful they do not practice under the standards of the California court.

## PRESIDENT'S MESSAGE

*(Continued from page 95.)*

psychodrama in my dreams, and I didn't look very good in her shawl. I sincerely hope that the close association between the KMS and the KMS Auxiliary will continue to grow. Terrie's unbelievable dedication and energy in promoting the Auxiliary is an inspiration in and of itself. Her energy seems boundless. She has not only attended each of our council meetings, but has traveled an additional 8,000 miles on her own attending state and national auxiliary functions promoting the Kansas Auxiliary. I wish to thank her sincerely for all of her energy and efforts. What she has started can only lead to a stronger Kansas Medical Society and Auxiliary.

Finally, as I turn this job over to my very capable successor, Dr. Art Snow, I wish to challenge you as physicians and members of the Society to strive to maintain our high standards and our moral and ethical heritage. Let us work together as a unit to provide the best possible care for our patients and to promote our profession. We are a highly diverse group of individuals representing a broad spectrum of skills and opinions. In this new era of sociopolitical change for medicine, we need more than ever to rely on our medical society to provide a forum for open debate while avoiding the trap of division by special or diverse interests. We must stay in contact with the needs and wants of our community and patients. If we do these things, we will be a force strong enough to lead health care in a meaningful direction and advance the ideals and ethics of our profession.

Thank you, and here's wishing you the best of luck next year, Art.



# A Summary of My Year as KMSA President

EXCELLENCE can be attained if you . . .  
CARE more than others think is wise . . .  
DREAM more than others think is practical . . .  
EXPECT more than others think is possible.

*Anonymous*

**D**ear Physicians of Kansas:

As I write my last KANSAS MEDICINE message to you as President of the KMSA, I am in awe of all the work accomplished through our joint KMS/KMSA efforts this year. Many forward strides were achieved, starting with our joint installation last May. I have thoroughly enjoyed traveling with Dick Meidinger across our great state. In fact, as of March first I had racked up almost 8,000 miles in my car and over 6,500 air miles. (Fortunately for me, I enjoy flying more than Dick does!) He and I made "working together" the byword in Kansas, and many other states look with envy at this close working relationship.



As the quote at the top of the page suggests, I have found the year's experience very worthwhile. I have tried to lead, care, risk, dream and expect. Here are some of the year's highlights.

*Organ Donation Awareness.* Through the efforts of auxiliaries, the goal of 150 more potential Kansas donors listed in the National Registry for Marrow Donors was reached in December. With three more drives scheduled as I write this message, we may double that ambitious goal.

*CPR Training.* My goal was one CPR class sponsored per county auxiliary, plus a CPR marathon. CPR was on the agendas of nine county auxiliaries, and if you haven't been reached yet, there is still an opportunity to learn at the CPR marathon during the annual meeting in Topeka. This event will be held from 8:00 a.m. to 4:00 p.m. on Friday, April 30.

Of continuing concern was the goal of working on our relationship with our physician spouse. I don't know how to measure success or failure on this goal. My own spouse has many times felt neglected and stressed by having an "occasional wife" sharing his home. I would like to say "thanks" to him and to my special sons for car-

rying on this year. Each of us has changed, grown and adapted to meet a different set of priorities over the last three years. We are stronger for having gone through this experience. One of the boys even has the Pizza Hut's phone number memorized!

I remain more concerned than ever about the unique problems of medical families. Being married to a physician is difficult. Some things that each of us choose to do can make this situation better or worse. Having witnessed several breakups of medical families this year, my concern grows for the need we have to lean on each other, communicate effectively and love each other. Commitment has to start at home.

It has been quite an awesome responsibility and honor to serve as the president of the KMS Auxiliary. My horizons have been stretched and I will forevermore be changed by the experience. The nice thing about teamwork is that you always have others on your side. Thanks for being on my team. I look forward to seeing many of you in Topeka at the annual meeting.

I did my best.

I accomplished many goals.

I feel good about the future of our organization.

I made new friends.

I had fun.



I can ask for no more.

Thanks. Your friend,

*Terrie Brasing*

(Clarification: A sentence in my February message should have read: "I am very proud of Clay County Hospital, which is one of the very few in Kansas where 100% of the *medical* staff is currently certified in both CPR and advanced life support.")



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# Claims and Suits Against the HCSF

RON TODD\*

**T**he Health Care Stabilization Fund (HCSF) is authorized to dispose of medical professional liability claims and suits through settlement proceedings or jury trials. In this article, I summarize the number of cases that were settled and tried before juries, as well as the results of these cases, during fiscal year (FY) 1992. I then compare these figures and results with those of several recent fiscal years. (For the State of Kansas, a fiscal year is a 12-month period beginning on July 1 of a given year and ending on June 30 of the following year.)

## Jury Verdicts

Twenty cases involving Kansas health care providers were tried before juries during fiscal year 1992. (See Table 1.) The loss cost to the Fund for the two plaintiff verdicts in this year was \$934,714.

## Cases Settled

The Fund settled 33 claims in 27 cases with a total settlement value of \$7,890,120 during FY 1992. (See Table 2.) These figures do not include settlement contributions by primary carriers, which provide up to \$200,000 of coverage per health care provider.

## Summary

The HCSF incurred total settlements and awards for FY 1992 in the amount of \$8,824,834. This compares to \$19.6 million in FY 1991 and \$16.3 million in FY 1990. The number of claims involving Fund monies fell this past fiscal year, and the average payout per claim decreased; however, any conclusion from these data must be carefully drawn. The decrease in the number of claims involving a contribution from the Fund and the decrease in the total amount of Fund money in-

TABLE 1  
SUMMARY OF CASES TRIED BEFORE JURIES

<i>Fiscal Year</i>	<i>Number of Cases</i>	<i>Results</i>		
1992	20 Cases	15 Defense	2 Plaintiff	1 directed verdict for defendant, 1 settled during trial and 1 ended with a hung jury
1991	25 Cases	16 Defense	9 Plaintiff	
1990	19 Cases	15 Defense	4 Plaintiff	

TABLE 2  
HEALTH CARE STABILIZATION FUND CLAIM SETTLEMENTS

<i>Size of Settlement</i>	<i>Fiscal Year 1992</i>	<i>Fiscal Year 1991</i>	<i>Fiscal Year 1990</i>	<i>Fiscal Year 1989</i>	<i>Fiscal Year 1988</i>
\$500 to \$99,999	14	20	17	34	29
\$100,000 to \$499,999	13	17	22	16	13
\$500,000 to \$999,999	6	2	5	3	3
\$1 Million or More	0	5	3	4	2
TOTALS	33	43	47	57	47



curred is likely due to the drop in the number of cases filed two years ago, rather than from any changes in the medical malpractice environment. In addition, the decline in Fund claim numbers and the Fund loss amounts for FY 1992 may simply be calendar-related happenstance. For example, during the first three months of FY 1993, the Fund was involved in settlements of an unusually large number of claims, resulting in Fund loss contributions of \$12.8 million. It may be that when FY 1993 is concluded and averaged together with the results from FY 1992, the averaged amounts will resemble the Fund's experience for FY 1991.

In this article, I have attempted to provide some of the more interesting HCSF claim statistics for the past several fiscal years. I hope this information will assist Kansas physicians in understanding some of the Fund's claims activities.

---

\*Kansas Commissioner of Insurance.



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**Action:** Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage, although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalamic centers and release of posterior pituitary hormone.

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it; however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

**Indications:** Yocon<sup>®</sup> is indicated as a sympatholytic and mydriatic. It may have activity as an aphrodisiac.

**Contraindications:** Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

**Warning:** Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

**Adverse Reactions:** Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.<sup>1,2</sup> Also dizziness, headache, skin flushing reported when used orally.<sup>1,3</sup>

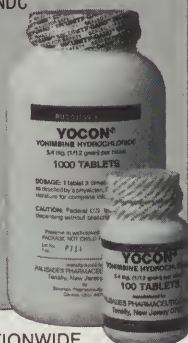
**Dosage and Administration:** Experimental dosage reported in treatment of erectile impotence.<sup>1,3,4</sup> 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to 1/2 tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.<sup>3</sup>

**How Supplied:** Oral tablets of Yocon<sup>®</sup> 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.

#### References:

1. A. Morales et al., New England Journal of Medicine: 1221. November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
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## THE WAY IT WAS

(From the *Journal of the Kansas Medical Society*, December 1925.)

### THE PHYSICIANS' HOME, INC.

The campaign to establish an endowment fund for the Physicians' Home, the first small unit of which is already in service at Caneadea, N.Y., was launched Monday, November 23, at the Waldorf-Astoria, New York. An impressive gathering that included men and women prominent in medicine, financial and other fields heard noted speakers outline the purposes of the campaign and laud the movement. A number of substantial donations were received indicating the interest of the profession and the public.

Excerpts from the addresses of speakers follow:

*United States Senator Royal S. Copeland, M.D.:*

"I hope and trust there are people enough in this country who appreciate the sacrifices made by the medical profession so that there can be abundant money raised to build a home big enough to take care of all the doctors who need it . . ."

*Congressman John J. Kindred, M.D.:*

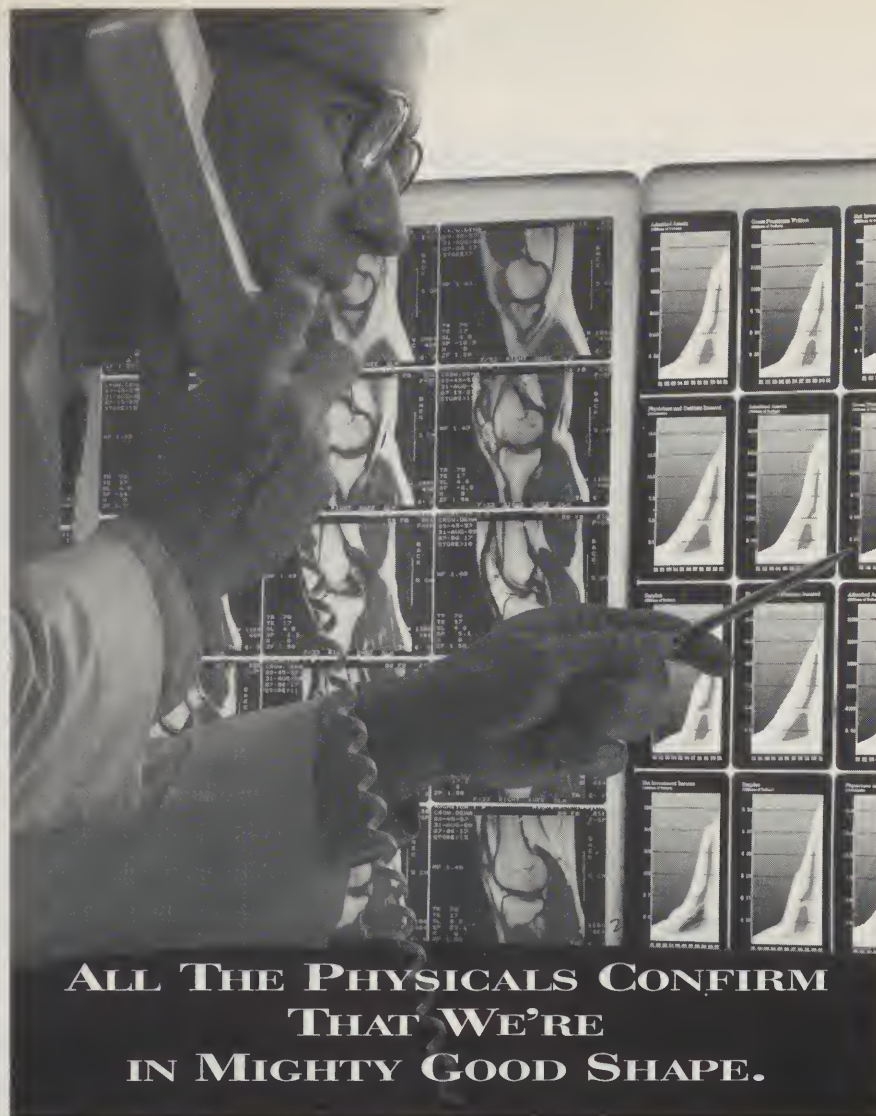
"From every sentimental standpoint, from every humanitarian standpoint, from every practical and economic standpoint, there can be but one conclusion as to the urgent necessity for a national physicians' home . . ."

*Samuel Untermeyer:*

" . . . From the obscure, patient, overworked country doctor, who toils at all hours by day and night relieving suffering and ministering alike to the poor and the rich, to the men who have climbed to the top and have attained national and international fame, 'service' has been the keynote of their lives . . ."

It was disclosed at the inaugural banquet that of the more than 140,000 physicians in the United States approximately 5 percent are incapacitated. It is these the Home seeks to serve.





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# Hypertension in Pregnancy: Preeclampsia-Eclampsia

HARLAN OPIE, B.S.,\* AND THOMAS E. SNYDER, M.D.,† *Kansas City*

**H**ypertension in pregnancy, previously termed toxemia of pregnancy, is divided into four categories, as suggested by ACOG in 1972. These are: I, preeclampsia-eclampsia; II, chronic hypertension; III, chronic hypertension with superimposed preeclampsia; and IV, late or transient hypertension. These categories seem at first glance to be somewhat oversimplified, but they function quite well in the classification of hypertension in pregnancy. The importance of these distinctions should become very clear in the course of this article.

Patients in category II (chronic hypertension) usually have pre-existing essential hypertension (HTN), often with a history of efficacious treatment, but rarely have other causes such as pheochromocytoma or collagen vascular disease. Category III (chronic hypertension with superimposed preeclampsia) is often associated with pre-existing essential HTN or pre-existing renal disease. This condition predisposes to preeclampsia and presents the greatest challenge to the clinician in terms of definitive diagnosis. In category IV (late or transient hypertension), the hypertension is usually mild and of short duration, occurring near term or in the first 24 hours postpartum.

It is important to distinguish patients in groups I and III from those in groups II and IV because in types II and IV there is increased risk of recurrence in subsequent pregnancies. Also, the treatment for each of these groups is different. Type IV, as well as preeclampsia-eclampsia, predisposes to hypertension later in life.<sup>7</sup> Often the distinction can be made with a thorough history to see if there was a hypertensive condition prior to pregnancy. Careful consideration of the time of onset

during gestation can also help to differentiate. Earlier onset is associated more closely with groups II and IV.<sup>1</sup> This article will deal with the most potentially serious of these categories; that is, those with a preeclamptic component (I and III). It is the preeclamptic situation that has the greatest impact on long-term fetal and maternal morbidity and mortality.

## What Is Preeclampsia?

Diagnosis of preeclampsia is based upon the finding of hypertension in pregnancy associated with proteinuria and/or non-dependent edema. These findings can be present in varying degrees of severity and combinations, along with other signs and symptoms. When these signs and symptoms are seen in the context of pregnancy, one must maintain a high index of suspicion for possible early preeclampsia. It is estimated that preeclampsia in all forms affects approximately 5 to 10% of pregnancies.<sup>1,4</sup>

Several risk factors predispose to the development of preeclampsia, which is primarily a disease of primigravidas. Large gestational size is a risk factor for developing the condition. Other risk factors include polyhydramnios; diabetes; extremes of age, especially young mothers; gestational age greater than 20 weeks; and a familial component.<sup>7</sup> Black females also have an increased risk secondary to a higher incidence of undiagnosed chronic hypertension.<sup>6,7</sup> Socioeconomic factors by themselves have been shown to play a role in eclampsia, but not in development of preeclampsia. Hydatidiform mole also predisposes to preeclampsia. The presence of newly diagnosed hypertension in pregnancy prior to 20 weeks' gestation should raise suspicion for a hydatidiform mole until proven otherwise.

## Pathophysiology

Preeclampsia is a global phenomenon in which the most widely accepted mechanism is vasospasm with capillary injury and increased capillary permeability. A model has yet to be developed that explains all of the findings present in the

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disease. The leading theory, however, involves the actions of various arachidonic acid metabolites, specifically prostaglandin E (PGE2 and prostacyclin) and thromboxanes (Tx).<sup>1</sup>

In normal pregnancy, blood pressure drops below pre-pregnancy levels in the first two trimesters. The magnitude of this drop is in the range of 7 to 10 mm Hg diastolic.<sup>6</sup> The cause of this decrease is attributed to endothelial cell production of vasodilatory PGE2 and similar substances. In the preeclamptic patient, this mechanism malfunctions due to the production of vasoconstrictive thromboxane metabolites, defective production of PGE2 products, or a combination of both. Once the series of events leading to a thromboxane/prostaglandin imbalance begins, a cycle ensues which causes the vasoconstrictive events. As the vasoconstriction and capillary injury worsens, there is albumin loss into the interstitial spaces. The above events combine to decrease intravascular volume, and the kidneys react by increasing activity in the renin/angiotensin system. This is an ever-decompensating cycle which will end in cardiovascular collapse if not treated.<sup>1</sup> The stimulus for this series of events is thought to be immunologic in nature, stemming from maternal/trophoblastic interaction, although the pathophysiologic mechanism is far from clear.

### Making the Diagnosis

Hypertension and proteinuria, or edema (especially non-dependent edema of the face and hands), are by definition necessary for the diagnosis of preeclampsia. More commonly, however, one or two of the triad may not be present initially, making the diagnosis difficult. Often the earliest sign noticed by the physician is either a consistent elevation of blood pressure or rapid weight gain. The occurrence of non-dependent edema and proteinuria is less dependable for early diagnosis because they may not present until the disease process is well advanced.

Tables 1 and 2 present two similar sets of criteria for diagnosing preeclampsia. Of particular note is the >30 mm Hg rise in systolic pressure and >15 mm Hg rise in diastolic pressure over pre-pregnancy values. Blood pressure is taken in the lateral position twice with six hours between readings. This method is helpful in allowing diagnosis of preeclampsia in mothers who may have low pre-pregnancy blood pressure. The other criteria are useful when pre-pregnancy blood pressure is not known. All of these criteria can be used

TABLE 1  
CRITERIA FOR CLASSIFICATION OF  
PREECLAMPSIA

Mild: BP: 140/90 -160/110 or >30 mm Hg increase systolic from pre-pregnancy >15 mm Hg increase diastolic from pre-pregnancy With one of the following: Proteinuria: <5gm/24 hours (1-2 plus) Edema: hand and/or face
Severe: BP: >160/110 Proteinuria: >5gm/24 hours (3-4 plus)
Eclampsia: Preeclampsia with seizures.
(Adapted from Hacker, et al., 1986.)

to help make an early diagnosis of preeclampsia. In occasional cases the condition may be overdiagnosed, but this is considered acceptable given the poor prognosis of untreated disease.

Other signs and symptoms indicative of preeclampsia include pulmonary edema, fetal distress, intrauterine growth retardation, and oligohydramnios secondary to utero-placental insufficiency.<sup>5</sup> HELLP syndrome (Hemolysis, Elevated Liver enzymes, Low Platelets) is a variant, generally thought to be a severe form of preeclampsia, which may present in misleading ways. Its characteristics, as the name suggests, include intravascular hemolysis, elevated liver enzymes, and low platelets.<sup>1</sup> Hemolysis is shown on the peripheral smear by the presence of schistocytes.<sup>6</sup> Elevated total bilirubin with an elevated non-conjugated fraction is also present in instances where the condition has been present for a more prolonged time period. Splenomegaly as a sign of organ injury is due to red blood cell destruction and may or may not be noticed due to the gravid uterus. Elevated liver enzymes include the standard transaminases (ALT and AST). Prolonged PT is indicative of increased consumption of clotting factors. Alkaline phosphatase is normally elevated in pregnancy and therefore should not be included in the criteria. Platelet levels of less than 100,000 are generally considered abnormal.<sup>1</sup>

The patient with HELLP syndrome may present with very mild preeclamptic signs, but may progress in 24 to 48 hours to increasing proteinuria, headache, epigastric pain (indicative of hepatic distention), and a seizure prodrome such as perioral twitching.<sup>6</sup> Consistent evidence of deteriorating LFTs, with or without the other accompanying signs and symptoms, is an indication for delivery. A trial of labor may be attempted, but



the situation must be closely monitored. If LFTs or other parameters worsen, Cesarean section should be considered. Any unnecessary delay may lead to an increased incidence of operative complications in light of coagulopathy present in many advanced cases of HELLP syndrome.

Postpartum preeclampsia is an unusual condition indicated by the presence of sustained postpartum hypertension, with onset 48 hours to several weeks after birth. This condition is distinguished from ACOG category IV of transient hypertension by duration of disease. Compared to transient hypertension, postpartum preeclampsia usually lasts longer and does not revert spontaneously.

### Management

There are two basic approaches to treating hypertension in pregnancy, which stem from the hypothesized etiology of the condition. We will be concerned primarily with the condition of preeclampsia, with or without underlying chronic hypertension. Chronic hypertension and transient hypertension (categories II and IV in the 1972 ACOG classification) will, however, be mentioned briefly.

### The Chronically Hypertensive Patient

When dealing with a chronically hypertensive pa-

tient in pregnancy, it must be remembered that the usual therapies for treating high blood pressure in non-pregnant patients are not always appropriate. For example, the patient should not lose weight during pregnancy. If a patient needs to lose weight for control of blood pressure, it is best if done prior to conception. The patient should not restrict salt intake. The exception may be the chronically hypertensive patient who has been shown in the past to have salt-sensitive hypertension. The restriction of salt and the concomitant decrease in the intravascular fluid volume can actually worsen the situation if any preeclamptic component is involved. Bed rest should be encouraged in the treatment of chronically hypertensive pregnant patients. No vigorous exercise, no smoking or alcohol consumption, and home blood pressure monitoring also help in early diagnosis of those who are at risk for preeclampsia. Lastly, if it is not possible to maintain the patient's diastolic blood pressure below 100 mm Hg by bed rest alone, pharmacologic agents such as alpha-methyldopa (Aldomet) may be useful. Long-term follow-up of fetuses exposed to this drug has shown it to be reasonably safe. If for some reason this drug is not tolerated, the combination alpha- and beta-blocker labetalol is gaining acceptance.

Some medications should be avoided in the pharmacologic treatment of chronic hypertension in pregnancy. ACE inhibitors have been shown to lower uterine blood flow in animal models and are thus avoided in pregnancy. Diuretics should also be avoided due to the mechanism at work in the preeclamptic. Diuresis and its associated decrease in intravascular volume could worsen the preeclamptic condition. If, however, the use of diuretics is indicated (as in a known case of pre-existing hypertension), they are efficacious and may potentiate other anti-hypertensive agents.

### The Transiently Hypertensive Patient

Hypertension which occurs late in the pregnancy or after delivery without other signs of preeclampsia or preexisting hypertension is termed transient hypertension. The course of this disease is generally self-limited, and can be managed with the above-mentioned treatment modalities. In the event that pharmacologic therapy is required, labetalol, calcium channel blockers, and/or diuretics can be employed after birth, since there is no longer a danger to the fetus. Passage of these agents to the newborn from a breast-feeding

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TABLE 2  
CRITERIA FOR PREECLAMPSIA AND  
SEVERE PREECLAMPSIA

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#### *Preeclampsia*

- 1) Blood pressure 140/90, or rise of 30 mm Hg systolic and 15 mm Hg diastolic, recorded on at least two occasions 6 hours apart.
- 2) Proteinuria 0.3 gm in 24-hour urine collection, or 1 gm/liter in 2 random urine specimens collected 6 hours apart.
- 3) Edema: 1+ pitting edema after 12 hours of bed rest or weight gain of five pounds in one week.

(Adapted from ACOG Technical Bulletin Number 91.)

#### *Severe Preeclampsia*

- 1) Blood pressure of >160 mm Hg systolic, or >110 mm Hg diastolic, recorded on at least two occasions at least 6 hours apart with patient at bed rest.
- 2) Proteinuria of >5 g in 24 hours (3+ or 4+ on qualitative examination).
- 3) Oliguria (<400 ml in 24 hours).
- 4) Cerebral or visual disturbances.
- 5) Epigastric pain.
- 6) Pulmonary edema or cyanosis.

Adapted from Anderson, et al., 1986.

mother is not thought to be of clinical significance.<sup>6</sup>

### **The Preeclamptic Patient**

It is appropriate to treat preeclampsia before the onset of full-blown signs of hypertension and severe proteinuria. In mild cases, early treatment consists of hospitalization and strict bed rest with frequent monitoring of vital signs, urine output, appropriate blood chemistry, and fetal testing. This has proven to be efficacious in extending the length of gestation. The goal is to relieve uteroplacental insufficiency by optimizing hemodynamics. The onset of signs and symptoms of preeclampsia demands aggressive management (see tables 1 and 2). For seizure prophylaxis, the standard treatment is magnesium sulfate (dose: 4 gm IV bolus over the first 15 to 30 minutes, then 2 to 3 gm every hour). Magnesium levels should be monitored every 4 hours, or sooner if there are signs of toxicity. These include decreased deep tendon reflexes (DTR), decreased respiratory rate, and cardiovascular depression. Ideal therapeutic levels are in the range of 4 to 6 meq/l. At higher levels (approximately 10 meq/l), DTRs disappear, and cardiovascular/respiratory toxicity becomes evident at blood levels of approximately 10 to 12 meq/l.

Blood pressure can be controlled by IV hydralazine or labetalol. Adequate IV hydration is crucial to therapy and should be instituted prior to any pharmacologic treatment. Proper hydration is necessary to counteract the effects of decreased intravascular volume. The goal is to keep the diastolic blood pressure below 100 mm Hg.<sup>1</sup> In cases where IV hydralazine or labetalol are not effective in keeping diastolic BP below 100 mm Hg, IV nitroprusside can be considered, but this must be weighed heavily against the maternal/fetal condition. In patients with pulmonary edema and renal failure, a Swan-Ganz catheter for monitoring of CVP and pulmonary wedge pressure may be helpful in further assessing the patient's condition.

Corticosteroids (dexamethasone or betamethasone) may be given in selected cases to enhance fetal lung maturity with the goal of at least 48 hours of fetal exposure prior to delivery of a preterm infant. Corticosteroids have not been shown to be efficacious after the 32nd week of pregnancy. Other possible modes of therapy include low-dose aspirin or NSAIDs. These work at the level of inhibition of arachidonic acid metabolism and show some promise for the future.<sup>6</sup>

After vital signs have been stabilized, conserva-

tive management may be considered in selected cases, dependent upon gestational age and maternal factors. Oral medications for BP include hydralazine, Aldomet, or labetalol. For previously mentioned reasons, ACE inhibitors and diuretics are contraindicated for control of hypertension. Convulsion prophylaxis continues with IV (or IM) magnesium sulfate.

The best maternal treatment is delivery; however, the fetus must be considered at all stages of gestation. Fetal monitoring throughout treatment for preeclampsia is crucial in assessing fetal/maternal risk/benefit profiles and assuring an optimal outcome. Several studies have recently looked at the morbidity and mortality of both mother and fetus at various gestational ages of presentation with preeclampsia. All of these studies were designed to assess the optimal time of delivery and to minimize maternal and fetal morbidity and mortality.

Sibai et al. found, in a study of 24- to 27-week gestations presenting with preeclampsia, that expectant management of less than 24-week gestations led to only a 6.7% chance of fetal survival. This care was undertaken at great risk of the mother developing further sequelae. At 24 to 27 weeks, a significant improvement in fetal outcome was seen in expectant management versus immediate delivery. These expectantly managed infants had higher birth weights and better Apgar scores, and spent less time in the NICU than their immediately delivered counterparts. Maternal morbidity in the expectantly managed group was comparable to the group that was delivered immediately in all categories except thrombocytopenia.<sup>2</sup>

Odendaal et al. found expectant management proved to be far better for fetal morbidity and mortality than immediate delivery in 28- to 34-week gestations.<sup>9</sup> Maternal morbidity and mortality were again comparable in the expectantly managed and immediately delivered groups. The expectantly managed newborns spent fewer days on the ventilator, had shorter NICU stays, and had less overall perinatal mortality. In cases of gestations over 34 weeks, due to the excellent survival prospects of the fetus, most authorities recommend delivery as soon as possible, since this is the only known way to arrest progress of the disease.<sup>9</sup>

It must be emphasized that expectant management should be undertaken only in a tertiary care facility with ICU-level care for the mother prior to delivery. It is desirable to transport the fetus



in utero rather than delivering a premature infant and then transporting mother and/or newborn separately.

### Summary

Diagnosis of preeclampsia involves consideration of many different factors. It is desirable to make the diagnosis early in the disease course for the best possible outcome for mother and fetus. Overdiagnosis may occur in some cases; however, given the severe maternal and fetal morbidity in cases of untreated disease, it is best to monitor and treat symptoms before they become severe. Overall goals of treatment include prolonging the pregnancy as long as possible without compromise of maternal health, while monitoring the fetus for signs of distress. Treatment for the mother is symptomatic, with seizure prophylaxis and hypertension control. In gestations less than 32 weeks, it is desirable to expose the fetal lungs to at least 48 hours of corticosteroids before delivery to enhance lung maturity.

Studies of preeclampsia have demonstrated high fetal morbidity/mortality for gestations less than 24 weeks. With expectant management, decreased fetal morbidity and mortality are shown for both 24- to 27- and 28- to 34-week gestations. Secondary to excellent fetal survival, immediate delivery is indicated for severe disease at gestation greater than 34 weeks.

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# Norplant: A Welcome New Contraceptive

MICHAEL D. BROWN, R.N., M.S.,\* *Topeka*

**A**ccording to the Kansas Department of Health and Environment, the annual percentage of all Kansas live births that occurred out of wedlock has risen for 32 straight years, to 23.2% in 1991. This and other reproductive data for the state suggest that many too-early or otherwise unplanned-for conceptions are occurring.

In 1991, the U.S. Food and Drug Administration approved Norplant, an effective, safe and easily reversible long-term contraceptive, for American use.<sup>1</sup> It has had over 500,000 users in almost 50 nations, including the United States. Norplant is manufactured in Finland and is distributed in the United States by Wyeth-Ayerst Laboratories, Philadelphia, Pennsylvania.<sup>2,3</sup> It is sold as a set of six flexible capsules, each containing 36 mg of levonorgestrel.<sup>1,3</sup> The capsules are implanted subdermally on the medial upper arm.

From this location, the steroid diffuses into the blood in slowly decreasing amounts.<sup>3</sup> Norplant inhibits ovulation, reduces the amount of cervical mucus and increases its viscosity (thereby reducing sperm migration), suppresses endometrial growth and development, and possibly inhibits progesterone in the luteal phase of menstruation.<sup>1</sup>

According to Trussell et al., Norplant has a typical failure rate lower than every other family planning method used in America.<sup>4</sup> These researchers explain "typical failure rate" means "among typical couples who initiate use of a method (not necessarily for the first time), the percentage who experience an accidental pregnancy during the first year if they do not stop use for any other reason" (p. 52).

The American Norplant distributor reported similar relationships among the methods' typical failure rates.<sup>3</sup> Others found nearly the same relationships among the pregnancy rates of Norplant and various birth control methods in literature reviews and clinical trials.<sup>2,5,6</sup>

An American cohort of Norplant users had the

following annual Pearl pregnancy rates: (a) 355 women at one year, 0; (b) 283 women at two years, 2.1; (c) 191 women at three years, 3.1; (d) 69 women at four years, 0; and (e) 25 women at five years, 0.<sup>7</sup> Other groups of Norplant users had lower pregnancy rates.<sup>7</sup>

Studies found that the cumulative pregnancy rate of Norplant users increased somewhat after the second or third year for women who weighed over 70 kg, and that corresponding rate was significantly lower for users in each study's lightest weight class.<sup>3,7</sup>

Trussell et al. reported American first-year continuation rates of 73 to 75% for oral contraceptives, 70% for injectable progestogens, and 90% for Norplant.<sup>4</sup> Others have found similar relationships among the continuation rates of Norplant and other birth control methods in literature reviews and clinical trials.<sup>1,2,8</sup> However, some studies found that a significant proportion of those discontinuing Norplant stop it for "personal" reasons (husband's objection, planning pregnancy, moving away, clinical trial over, separated/divorced/widowed, and so forth).<sup>2,3,6,9</sup>

The cumulative continuation rates for 396 American Norplant users were 82% at one year, 65% at two years, 50% at three years, and 44% at four years.<sup>7</sup> A second American cohort and, especially, groups of Norplant users in Chile, Egypt and Thailand had higher continuation rates.<sup>2,7</sup>

The following percentages of 205 San Francisco Norplant users mentioned the positive feature listed: (a) effectiveness, 43%; (b) ease of use, 41%; (c) "I like it," 39%.<sup>10</sup> Among 110 former Norplant users in San Francisco, 61% planned to use it again.

The user can conceive as soon as one month after Norplant removal.<sup>1,7</sup> Since it does not utilize estrogen, users experience none of the side effects attributable to that steroid.<sup>5</sup> Many women do experience alterations in menstrual patterns, including prolonged bleeding, spotting between periods, and very light or no bleeding.<sup>3</sup>

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## "Norplant has a typical failure rate lower than every other ... method used in America."

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Local insertion site reactions, such as infection, can occur.<sup>7</sup> The ectopic pregnancy rate has been 0.28 per 1,000 woman-years of Norplant use, an incidence lower than that of ectopic pregnancies in women not using family planning.<sup>5,7</sup> There are a few fairly common and several rare additional adverse effects.<sup>1-3</sup>

The initial cost is \$500 to \$600, which includes the Norplant, thorough counseling and screening, and insertion.<sup>7</sup> Since 1992 the Medicaid program has covered Norplant as an outpatient drug. Discontinuation requires minor surgery for removal of the capsules, which costs \$100 to \$300. This procedure is also covered by Medicare in Kansas.

Correct subdermal placement of the capsules will facilitate their removal.<sup>5</sup> A drawing of the implants' locations should be made in the patient's medical record.

Norplant is appropriate for many women who want continuous long-term contraception.<sup>5</sup> Some of these women may have had contraindications to or unacceptable adverse effects from other family planning methods.<sup>10</sup> Definite contraindications to Norplant include: (a) acute liver disease, including benign or malignant tumors; (b) jaundice; (c) undiagnosed vaginal bleeding; (d) a history of thrombophlebitis, pulmonary embolism, or blood clots in the eyes; (e) a history of heart attack, chest pain due to diagnosed heart disease, or stroke (coronary artery or cerebrovascular disease); (f) possible pregnancy; (g) lactation until at least six weeks postpartum; (h) hemorrhagic disorder; (i) anticoagulation therapy; and (j) drugs such as rifampin, barbiturates, phenytoin, carbamazepine, phenylbutazone, and isoniazid, which may interact with the hormone in Norplant and decrease its effectiveness.<sup>1,3</sup>

To maximize the Norplant continuation rate, physicians should thoroughly counsel each patient (and her sex partner) on its disadvantages and possible adverse effects.<sup>1,10</sup> Physicians should take a complete history to determine each patient's contraindications.<sup>3</sup> A detailed set of instructions should be given to each user.<sup>3</sup>

Considering the cost, effectiveness rate, and continuation rate of all family planning methods, Norplant can be a cost-efficient method. Physicians who carefully counsel and screen their Norplant candidates likely will find it a welcome addition to the contraceptive repertoire.<sup>5-8</sup>

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## Breast-Conservation Treatment



AT LEAST ONE-THIRD OF ALL BREAST CANCER PATIENTS COULD HAVE LUMPECTOMY FOLLOWED BY RADIATION THERAPY

The American Cancer Society, the American College of Surgeons and the American College of Radiology have agreed that women whose early breast cancer was detected by mammography are candidates for breast-saving treatment. According to new standards, women with small lumps, those with tumors as large as two inches, and even some women with positive nodes may be candidates for this treatment.

Stage for stage, patients treated in this manner have the same longevity and the same freedom from local recurrence as those treated with mastectomy.

For copies of the standards please contact Keri Sperry, American College of Radiology, 1891 Preston White Drive, Reston, VA 22091.



# Declining Incidence of *Haemophilus* Meningitis in Kansas

**H***aemophilus influenzae* is the most common cause of bacterial meningitis in children 2 months to 5 years of age in the United States. Peak incidence is in children 6 to 12 months of age. Invasive disease is most commonly due to infection with *H. influenzae* type B.

*Haemophilus B* polysaccharide vaccine was first licensed for use in children  $\geq 24$  months of age in 1985; however, postlicensure case-control studies gave variable estimates of efficacy ranging from 0 to 88%. Beginning in 1988, *Haemophilus B* conjugate vaccine became available for use in children  $\geq 18$  months of age. Although this vaccine had substantially improved immunogenicity, it was not intended for use in younger children who were at the greatest risk of disease. This last problem was overcome in October 1990 when the conjugate vaccine was licensed for use in children  $\geq 2$  months of age. This report documents the declining incidence of *Haemophilus* meningitis in Kansas since 1985, when the first vaccine was licensed for use.

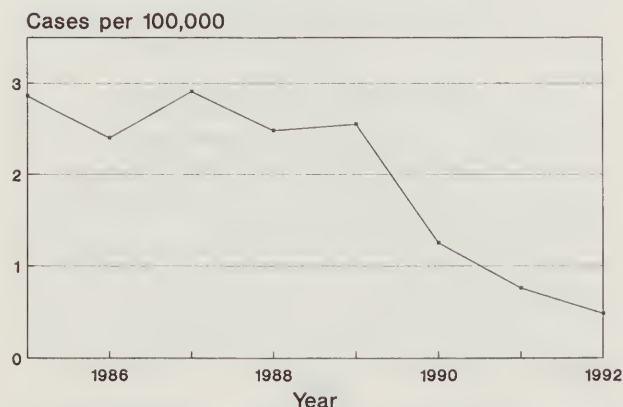
As shown in the figure, the number of cases of *H. influenzae* meningitis reported in Kansas has declined from 70 in 1985 (2.9 cases per 100,000 population) to 12 in 1992 (0.5 cases per 100,000). The number of cases reported in 1992 represents an 81% decrease from the 5-year median. Ten (83%) of the cases reported in 1992 occurred in children  $\leq 1$  year of age. The other two cases occurred in a 6-year-old and a 38-year-

old. Two-thirds of the cases occurred in females. One case was fatal. Cases were reported from nine counties in the state. The immunization status of the case-patients and the serotype of the *H. influenzae* isolates were unknown. This information will be collected on all cases reported in 1993.

The declining incidence of *Haemophilus* meningitis in Kansas is consistent with recent reports from other areas of the country. Although there may be some natural fluctuation in disease incidence, it appears that the widespread use of *Haemophilus B* vaccine is the major cause for the decline in reported cases. Nationwide, it is estimated that the conjugate vaccine prevented 10,000 to 16,000 cases of *H. influenzae* type B disease in 1991.

Eliminating *Haemophilus* meningitis among young children is dependent on efforts to immunize all children beginning at two months of age. Retrospective surveys of immunization coverage in Kansas have shown that only about half of all children are adequately immunized by two years of age. Greater efforts will need to be made to insure that all children are fully immunized at the appropriate ages.

The Kansas Department of Health and Environment (KDHE) supplies *Haemophilus influenzae* type B vaccine to all health departments throughout the state. Although the vaccine is provided free by KDHE, most health departments do charge an administration fee to cover the cost of labor and supplies. However, no child will be denied immunization because of an inability to pay.



*Haemophilus influenzae* meningitis rate by year in Kansas, 1985 to 1992.

Reported by: Immunization Section, Bureau of Disease Control, Kansas Department of Health and Environment.



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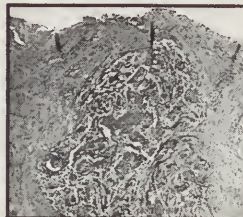
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## CARDIOLOGY NOTES

(Continued from page 116.)

### Comments

This represents one of a number of alternative strategies to the customary methods of administering thrombolytic agents to patients with acute myocardial infarction. The authors attribute the favorable impact on mortality to a significantly higher early patency rate associated with rt-PA but caution against widespread use until larger studies are completed.

### REFERENCE

Newhaus K-L, et al. Improved thrombolysis in acute myocardial infarction with front-loaded administration of alteplase: Results of the rt-PA-APSAC patency study (TAPS). *J Am Coll Cardiol* 1992;19:885-91.

## VOX DOX

To the Editor:

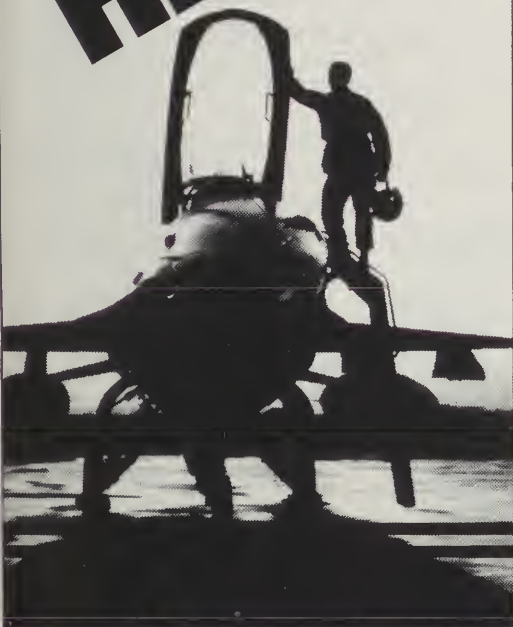
Dr. William J. Mills, Jr., Anchorage orthopedic surgeon, is a world-renowned scholar of thermal injuries. . . . In the 1970s, Dr. Mills and his associates wrote several papers that were published in *Alaska Medicine*, which at that time was not listed in Index Medicus.

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# Does 'Front-Loading' with rt-PA Improve Treatment of Acute Myocardial Infarction?

DONALD L. VINE, M.D.,\* *Wichita*

**E**conomic issues surrounding the interpretation of studies comparing thrombolytic agents for the treatment of acute myocardial infarction may have directed attention away from studies of alternative ways of delivering these agents. A case in point is the rt-PA-APSAC Patency Study (TAPS), which randomly compared "front-loaded" infusion of rt-PA with standard administration of APSAC for patients with acute myocardial infarction.

## TAPS

Alteplase was given to 210 randomly selected patients as a bolus of 15 mg, followed by 50 mg over 30 minutes and 35 mg over 60 minutes. This was compared to the effects of a standard dose of APSAC, 30 mg over 5 minutes, given to 211 control patients. All were given a 5,000 U bolus of heparin at the start of thrombolytic agent infusion.

The subjects were largely male (80%), aged 25 to 75 years, presenting within six hours of onset of an acute myocardial infarction documented by appropriate symptoms and two or more mm ST segment elevation on the electrocardiogram.

Coronary angiography was performed at 60 and 90 minutes, at 24 to 48 hours, and at 14 to 21 days. The primary endpoint was angiographic patency. Secondary endpoints were death and reocclusion.

## Patency

Differences in angiographic patency between rt-PA and APSAC were dramatically related to the time after onset of infusion and to the difference in reocclusion rates (Figure 1). The patency rates for rt-PA at 60 minutes (73%) and 90 minutes (84%) were superior to the rates for APSAC (60 and 70%, respectively).

By the time of the 24- to 48-hour angiogram,

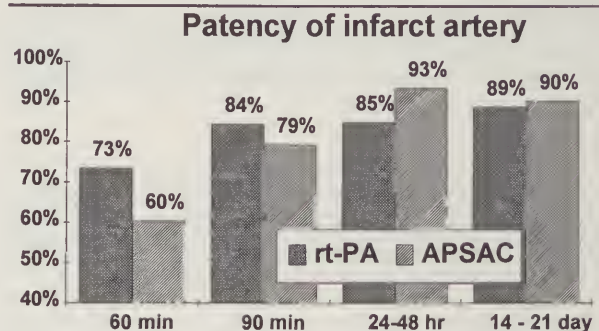


Figure 1. Patency of infarct artery.

the higher reocclusion rate associated with rt-PA administration and continued thrombolysis associated with APSAC led to patency rates of 85 and 93%, in favor of APSAC. At the two- and three-week angiogram, patency was essentially 90%, regardless of the agent initially used.

## Morbidity and Mortality

In-hospital death (2.4% versus 8.1%), bleeding associated with procedures (31% versus 45%), transfusions required (2.8% versus 8.1%), cardiogenic shock (1.9% versus 6.2%), and allergic reactions (0.5% versus 8.6%) all favored rt-PA (Figure 2). There was no difference in the incidence of intracranial bleeding (0.9%).

(Continued on page 115.)

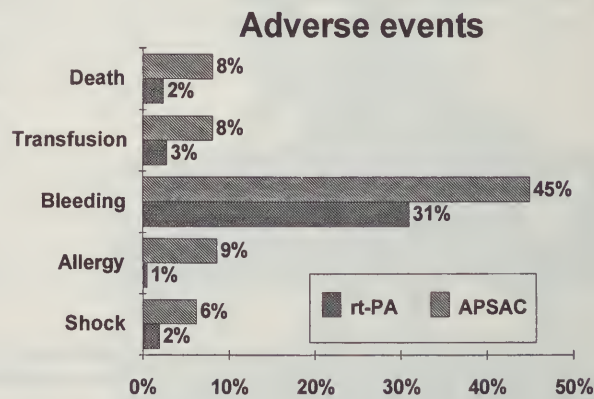


Figure 2. Adverse events.

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Address correspondence to Dr. Vine, Department of Medicine, UKSM-W, 1010 N. Kansas, Wichita, KS 67214.



# **PRAVACHOL® (Pravastatin Sodium Tablets)**

## **CONTRAINDICATIONS**

Hypersensitivity to any component of this medication.

Active liver disease or unexplained, persistent elevations in liver function tests (see WARNINGS).

**Pregnancy and lactation.** Atherosclerosis is a chronic process and discontinuation of lipid-lowering drugs during pregnancy should have little impact on the outcome of long-term therapy of primary hypercholesterolemia. Cholesterol and other products of cholesterol biosynthesis are essential components for fetal development (including synthesis of steroids and cell membranes). Since HMG-CoA reductase inhibitors decrease cholesterol synthesis and possibly the synthesis of other biologically active substances derived from cholesterol, they may cause fetal harm when administered to pregnant women. Therefore, HMG-CoA reductase inhibitors are contraindicated during pregnancy and in nursing mothers. **Pravastatin should be administered to women of childbearing age only when such patients are highly unlikely to conceive and have been informed of the potential hazards.** If the patient becomes pregnant while taking this class of drug, therapy should be discontinued and the patient apprised of the potential hazard to the fetus.

## **WARNINGS**

**Liver Enzymes:** HMG-CoA reductase inhibitors, like some other lipid-lowering therapies, have been associated with biochemical abnormalities of liver function. Increases of serum transaminase (ALT, AST) values to more than 3 times the upper limit of normal occurring on 2 or more (not necessarily sequential) occasions have been reported in 1.3% of patients treated with pravastatin in the U.S. over an average period of 18 months. These abnormalities were not associated with cholestasis and did not appear to be related to treatment duration. In those patients in whom these abnormalities were believed to be related to pravastatin and who were discontinued from therapy, the transaminase levels usually fell slowly to pretreatment levels. These biochemical findings are usually asymptomatic although worldwide experience indicates that anorexia, weakness, and/or abdominal pain may also be present in rare patients.

As with other lipid-lowering agents, liver function tests should be performed during therapy with pravastatin. Serum aminotransferases, including ALT (SGPT), should be monitored before treatment begins, every six weeks for the first three months, every eight weeks during the remainder of the first year, and periodically thereafter (e.g., at about six-month intervals). Special attention should be given to patients who develop increased transaminase levels. Liver function tests should be repeated to confirm an elevation and subsequently monitored at more frequent intervals. If increases in AST and ALT equal or exceed three times the upper limit of normal and persist, then therapy should be discontinued. Persistence of significant aminotransferase elevations following discontinuation of therapy may warrant consideration of liver biopsy.

Active liver disease or unexplained transaminase elevations are contraindications to the use of pravastatin (see CONTRAINDICATIONS). Caution should be exercised when pravastatin is administered to patients with a history of liver disease or heavy alcohol ingestion (see CLINICAL PHARMACOLOGY: Pharmacokinetics/Metabolism). Such patients should be closely monitored, started at the lower end of the recommended dosage range, and titrated to the desired therapeutic effect.

**Skeletal Muscle:** Rhabdomyolysis with renal dysfunction secondary to myoglobinuria has been reported with pravastatin and other drugs in this class. Uncomplicated myalgia has also been reported in pravastatin-treated patients (see ADVERSE REACTIONS). Myopathy, defined as muscle aching or muscle weakness in conjunction with increases in creatine phosphokinase (CPK) values to greater than 10 times the upper limit of normal was reported to be possibly due to pravastatin in only one patient in clinical trials (<0.1%). Myopathy should be considered in any patient with diffuse myalgia, muscle tenderness or weakness, and/or marked elevation of CPK. Patients should be advised to report promptly unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever. **Pravastatin therapy should be discontinued if markedly elevated CPK levels occur or myopathy is diagnosed or suspected. Pravastatin therapy should also be temporarily withheld in any patient experiencing an acute or serious condition predisposing to the development of renal failure secondary to rhabdomyolysis, e.g., sepsis; hypotension; major surgery; trauma; severe metabolic, endocrine, or electrolyte disorders; or uncontrolled epilepsy.**

The risk of myopathy during treatment with lovastatin is increased if therapy with either cyclosporine, gemfibrozil, erythromycin, or niacin is administered concurrently. There is no experience with the use of pravastatin together with cyclosporine. Myopathy has not been observed in clinical trials involving small numbers of patients who were treated with pravastatin together with niacin. One trial of limited size involving combined therapy with pravastatin and gemfibrozil showed a trend toward more frequent CPK elevations and patient withdrawals due to musculoskeletal symptoms in the group receiving combined treatment as compared with the groups receiving placebo, gemfibrozil, or pravastatin monotherapy. Myopathy was not reported in this trial (see PRECAUTIONS: Drug Interactions). One patient developed myopathy when clofibrate was added to a previously well tolerated regimen of pravastatin; the myopathy resolved when clofibrate therapy was stopped and pravastatin treatment continued. **The use of fibrates alone may occasionally be associated with myopathy. The combined use of pravastatin and fibrates should generally be avoided.**

## **PRECAUTIONS**

**General:** Pravastatin may elevate creatine phosphokinase and transaminase levels (see ADVERSE REACTIONS). This should be considered in the differential diagnosis of chest pain in a patient on therapy with pravastatin.

**Homozygous Familial Hypercholesterolemia.** Pravastatin has not been evaluated in patients with rare homozygous familial hypercholesterolemia. In this group of patients, it has been reported that HMG-CoA reductase inhibitors are less effective because the patients lack functional LDL receptors.

**Renal Insufficiency.** A single 20 mg oral dose of pravastatin was administered to 24 patients with varying degrees of renal impairment (as determined by creatinine clearance). No effect was observed on the pharmacokinetics of pravastatin or its 3 $\alpha$ -hydroxy isomeric metabolite (SQ 31,906). A small increase was seen in mean AUC values and half-life (t<sub>1/2</sub>) for the inactive enzymatic ring hydroxylation metabolite (SQ 31,945). Given this small sample size, the dosage administered, and the degree of individual variability, patients with renal impairment who are receiving pravastatin should be closely monitored.

**Information for Patients:** Patients should be advised to report promptly unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever.

**Drug Interactions:** Immunosuppressive Drugs, Gemfibrozil, Niacin (Nicotinic Acid), Erythromycin: See WARNINGS: Skeletal Muscle.

**Antihypertensive:** Clearance by the cytochrome P450 system was unaltered by concomitant administration of pravastatin. Since pravastatin does not appear to induce hepatic drug-metabolizing enzymes, it is not expected that any significant interaction of pravastatin with other drugs (e.g., phenytoin, quinidine) metabolized by the cytochrome P450 system will occur.

**Cholestyramine/Colestipol:** Concomitant administration resulted in an approximately 40 to 50% decrease in the mean AUC of pravastatin. However, when pravastatin was administered 1 hour before or 4 hours after cholestyramine or 1 hour before colestipol and a standard meal, there was no clinically significant decrease in bioavailability or therapeutic effect. (See DOSAGE AND ADMINISTRATION: Concomitant Therapy.)

**Warfarin:** In a study involving 10 healthy male subjects given pravastatin and warfarin concomitantly for 6 days, bioavailability parameters at steady state for pravastatin (parent compound) were not altered. Pravastatin did not alter the plasma protein-binding of warfarin. Concomitant dosing did increase the AUC and C<sub>max</sub> of warfarin but did not produce any changes in its anticoagulant action (i.e., no increase was seen in mean prothrombin time after 6 days of concomitant therapy). However, bleeding and extreme prolongation of prothrombin time has been reported with another drug in this class. Patients receiving warfarin-type anticoagulants should have their prothrombin times closely monitored when pravastatin is initiated or the dosage of pravastatin is changed.

**Cimetidine:** The AUC<sub>0-12h</sub> for pravastatin when given with cimetidine was not significantly different from the AUC for pravastatin when given alone. A significant difference was observed between the AUC's for pravastatin when given with cimetidine compared to when administered with antacid.

**Digoxin:** In a crossover trial involving 18 healthy male subjects given pravastatin and digoxin concurrently for 9 days, the bioavailability parameters of digoxin were not affected. The AUC of pravastatin tended to increase, but the overall bioavailability of pravastatin plus its metabolites SQ 31,906 and SQ 31,945 was not altered.

**Gemfibrozil:** In a crossover study in 20 healthy male volunteers given concomitant single doses of pravastatin and gemfibrozil, there was a significant decrease in urinary excretion and protein binding of pravastatin. In addition, there was a significant increase in AUC, C<sub>max</sub>, and T<sub>max</sub> for the pravastatin metabolite SQ 31,906. Combination therapy with pravastatin and gemfibrozil is generally not recommended.

In interaction studies with aspirin, antacids (1 hour prior to PRAVACHOL [pravastatin sodium]), cimetidine, nicotinic acid, or probucol, no statistically significant differences in bioavailability were seen when PRAVACHOL was administered.

**Other Drugs:** During clinical trials, no noticeable drug interactions were reported when PRAVACHOL was added to: diuretics, antihypertensives, digitalis, converting-enzyme inhibitors, calcium channel blockers, beta-blockers, or nitroglycerin.

**Endocrine Function:** HMG-CoA reductase inhibitors interfere with cholesterol synthesis and lower circulating cholesterol levels and, as such, might theoretically blunt adrenal or gonadal steroid hormone production. Results of clinical trials with pravastatin in males and post-menopausal females were inconsistent with regard to possible effects of the drug on basal steroid hormone levels. In a study of 21 males, the mean testosterone response to human chorionic gonadotropin stimulation was significantly reduced (p<0.004) after 16 weeks of treatment with 40 mg of pravastatin. However, the percentage of patients showing a  $\geq$ 50% rise in plasma testosterone after human chorionic gonadotropin stimulation did not change significantly after therapy in these patients. The effects of HMG-CoA reductase inhibitors on spermatogenesis and fertility have not been studied in adequate numbers of patients. The effects, if any, of pravastatin on the pituitary-gonadal axis in pre-menopausal females are unknown. Patients treated with pravastatin who display clinical evidence of endocrine dysfunction should be evaluated appropriately. Caution should also be exercised if an HMG-CoA reductase inhibitor or other agent used to lower cholesterol levels is administered to patients also receiving other drugs (e.g., ketoconazole, spironolactone, or cimetidine) that may diminish the levels or activity of steroid hormones.

**CNS Toxicity:** CNS vascular lesions, characterized by perivascular hemorrhage and edema and mononuclear cell

infiltration of perivascular spaces, were seen in dogs treated with pravastatin at a dose of 25 mg/kg/day, a dose that produced a plasma drug level about 50 times higher than the mean drug level in humans taking 40 mg/day. Similar CNS vascular lesions have been observed with several other drugs in this class.

A chemically similar drug in this class produced optic nerve degeneration (Wallerian degeneration of retinogeniculate fibers) in clinically normal dogs in a dose-dependent fashion starting at 60 mg/kg/day, a dose that produced mean plasma drug levels about 30 times higher than the mean drug level in humans taking the highest recommended dose (as measured by total enzyme inhibitory activity). This same drug also produced vestibulocochlear (Wallerian-like degeneration and retinal ganglion cell chromatolysis) in dogs treated for 14 weeks at 180 mg/kg/day, a dose which resulted in a mean plasma drug level similar to that seen with the 60 mg/kg dose.

**Carcinogenesis, Mutagenesis, Impairment of Fertility:** In a 2-year study in rats fed pravastatin at doses of 10, 30, or 100 mg/kg body weight, there was an increased incidence of hepatocellular carcinomas in males at the highest dose (p<0.01). Although rats were given up to 125 times the human dose (HD) on a mg/kg body weight basis, their serum drug levels were only 6 to 10 times higher than those measured in humans given 40 mg pravastatin as measured by AUC.

The oral administration of 10, 30, or 100 mg/kg (producing plasma drug levels approximately 0.5 to 5.0 times human drug levels at 40 mg) of pravastatin to mice for 22 months resulted in a statistically significant increase in the incidence of malignant lymphomas in treated females when all treatment groups were pooled and compared to controls (p<0.05). The incidence was not dose-related and male mice were not affected.

A chemically similar drug in this class was administered to mice for 72 weeks at 25, 100, and 400 mg/kg body weight, which resulted in mean serum drug levels approximately 3, 15, and 33 times higher than the mean human serum drug concentration (as total inhibitory activity) after a 40 mg oral dose. Liver carcinomas were significantly increased in high-dose females and mid- and high-dose males, with a maximum incidence of 90 percent in females. The incidence of adenomas of the liver was significantly increased in mid- and high-dose females. Drug treatment also significantly increased the incidence of lung adenomas in mid- and high-dose males and females. Adenomas of the eye Harderian gland (a gland of the eye of rodents) were significantly higher in high-dose mice than in controls.

No evidence of mutagenicity was observed *in vitro*, with or without rat-liver metabolic activation, in the following strains: microbial mutagen tests, using mutant strains of *Salmonella typhimurium* or *Escherichia coli*; a forward mutation assay in L5178Y TK +/– mouse lymphoma cells; a chromosomal aberration test in hamster cells; and a gene conversion assay using *Saccharomyces cerevisiae*. In addition, there was no evidence of mutagenicity in either a dominant lethal test in mice or a micronucleus test in mice.

In a study in rats, with daily doses up to 500 mg/kg, pravastatin did not produce any adverse effects on fertility or general reproductive performance. However, in a study with another HMG-CoA reductase inhibitor, there was decreased fertility in male rats treated for 34 weeks at 25 mg/kg body weight, although this effect was not observed in a subsequent fertility study when this same dose was administered for 11 weeks (the entire cycle of spermatogenesis, including epididymal maturation). In rats treated with this same reductase inhibitor at 180 mg/kg/day, seminiferous tubule degeneration (necrosis and loss of spermatogenic epithelium) was observed. Although not seen with pravastatin, two similar drugs in this class caused drug-related testicular atrophy, decreased spermatogenesis, spermatocytic degeneration, and giant cell formation in dogs. The clinical significance of these findings is unclear.

**Pregnancy: Pregnancy Category X:** See CONTRAINDICATIONS.

Safety in pregnant women has not been established. Pravastatin was not teratogenic in rats at doses up to 1000 mg/kg daily or in rabbits at doses of up to 50 mg/kg daily. These doses resulted in 20x (rabbit) or 240x (rat) the human exposure based on surface area (mg/meter<sup>2</sup>). However, in studies with another HMG-CoA reductase inhibitor, skeletal malformations were observed in rats and mice. PRAVACHOL (pravastatin sodium) should be administered to women of child-bearing potential only when such patients are highly unlikely to conceive and have been informed of the potential hazards. If the woman becomes pregnant while taking PRAVACHOL, it should be discontinued and the patient advised again as to the potential hazards to the fetus.

**Nursing Mothers:** A small amount of pravastatin is excreted in human breast milk. Because of the potential for serious adverse reactions in nursing infants, women taking PRAVACHOL should not nurse (see CONTRAINDICATIONS).

**Pediatric Use:** Safety and effectiveness in individuals less than 18 years old have not been established. Hence, treatment in patients less than 18 years old is not recommended at this time. (See also PRECAUTIONS: General.)

## **ADVERSE REACTIONS**

Pravastatin is generally well tolerated; adverse reactions have usually been mild and transient. In 4-month long placebo-controlled trials, 1.7% of pravastatin-treated patients and 1.2% of placebo-treated patients were discontinued from treatment because of adverse experiences attributed to study drug therapy; this difference was not statistically significant. In long-term studies, the most common reasons for discontinuation were asymptomatic serum transaminase increases and mild, non-specific gastrointestinal complaints. During clinical trials the overall incidence of adverse events in the elderly was not different from the incidence observed in younger patients.

**Adverse Clinical Events:** All adverse clinical events (regardless of attribution) reported in more than 2% of pravastatin-treated patients in the placebo-controlled trials are identified in the table below, also shown are the percentages of patients in whom these medical events were believed to be related or possibly related to the drug.

Body System/Event	All Events %		Events Attributed to Study Drug %	
	Pravastatin (N = 900)	Placebo (N = 411)	Pravastatin (N = 900)	Placebo (N = 411)
Cardiovascular				
Cardiac Chest Pain	4.0	3.4	0.1	0.0
Dermatologic				
Rash	4.0*	1.1	1.3	0.9
Gastrointestinal				
Nausea/Vomiting	7.3	7.1	2.9	3.4
Diarrhea	6.2	5.6	2.0	1.9
Abdominal Pain	5.4	6.9	2.0	3.9
Constipation	4.0	7.1	2.4	5.1
Flatulence	3.3	3.6	2.7	3.4
Heartburn	2.9	1.9	2.0	0.7
General				
Fatigue	3.8	3.4	1.9	1.0
Chest Pain	3.7	1.9	0.3	0.2
Influenza	2.4*	0.7	0.0	0.0
Musculoskeletal				
Localized Pain	10.0	9.0	1.4	1.5
Myalgia	2.7	1.0	0.6	0.0
Nervous System				
Headache	6.2	3.9	1.7*	0.2
Dizziness	3.3	3.2	1.0	0.5
Renal/Genitourinary				
Urinary Abnormality	2.4	2.9	0.7	1.2
Respiratory				
Common Cold	7.0	6.3	0.0	0.0
Rhinitis	4.0	4.1	0.1	0.0
Cough	2.6	1.7	0.1	0.0

\*Statistically significantly different from placebo.

The following effects have been reported with drugs in this class:

**Skeletal:** myopathy, rhabdomyolysis.

**Neurological:** dysfunction of certain cranial nerves (including alteration of taste, impairment of extra-ocular movement, facial palsy), tremor, vertigo, memory loss, paresthesia, peripheral neuropathy, peripheral nerve palsy.

**Hypersensitivity Reactions:** An apparent hypersensitivity syndrome has been reported rarely which has included one or more of the following features: anaphylaxis, angioedema, lupus erythematosus-like syndrome, polymyalgia rheumatica, vasculitis, purpura, thrombocytopenia, leukopenia, hemolytic anemia, positive ANA, ESR increase, arthritis, arthralgia, urticaria, asthenia, photosensitivity, fever, chills, flushing, malaise, dyspnea, toxic epidermal necrolysis, erythema multiforme, including Stevens-Johnson syndrome.

**Gastrointestinal:** pancreatitis, hepatitis, including chronic active hepatitis, cholestatic jaundice, fatty change in liver, and, rarely, cirrhosis, fulminant hepatic necrosis, and hepatoma; anorexia, vomiting.

**Reproductive:** gynecostasia, loss of libido, erectile dysfunction.

**Eye:** progression of cataracts (lens opacities), ophthalmoplegia.

**Laboratory Test Abnormalities:** Increases in serum transaminase (ALT, AST) values and CPK have been observed (see WARNINGS).

Transient, asymptomatic eosinophilia has been reported. Eosinophil counts usually returned to normal despite continued therapy. Anemia, thrombocytopenia, and leukopenia have been reported with other HMG-CoA reductase inhibitors.

**Concomitant Therapy:** Pravastatin has been administered concurrently with cholestyramine, colestipol, nicotinic acid, probucol and gemfibrozil. Preliminary data suggest that the addition of either probucol or gemfibrozil to therapy with lovastatin or pravastatin is not associated with greater reduction in LDL-cholesterol than that achieved with lovastatin or pravastatin alone. No adverse reactions unique to the combination or in addition to those previously reported for each drug alone have been reported. Myopathy and rhabdomyolysis (with or without acute renal failure) have been reported when another HMG-CoA reductase inhibitor was used in combination with immunosuppressive drugs, gemfibrozil, erythromycin, or lipid-lowering doses of nicotinic acid. Concomitant therapy with HMG-CoA reductase inhibitors and these agents is generally not recommended. (See WARNINGS: Skeletal Muscle and PRECAUTIONS: Drug Interactions.)

## **OVERDOSAGE**

There have been no reports of overdoses with pravastatin.

Should an accidental overdose occur, treat symptomatically and institute supportive measures as required.



THE PRAVACHOL® DIRECTION  
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Effective lipid management  
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pravastatin sodium 20 mg tablets

PRAVACHOL is indicated as an adjunct to diet for the reduction of elevated total and LDL-cholesterol levels in patients with primary hypercholesterolemia (Types IIa and IIb) when the response to diet alone has not been adequate.

Active liver disease or unexplained transaminase elevations, pregnancy and lactation are contraindications to the use of pravastatin sodium.

Please see CONTRAINDICATIONS, WARNINGS, PRECAUTIONS, and ADVERSE REACTIONS in the brief summary of prescribing information on the adjacent page.



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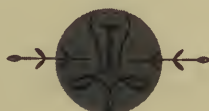
JOURNAL OF THE KANSAS MEDICAL SOCIETY

May 1993

Volume 94, Number 5



- Neoplastic Spinal Cord Compressions
- Squamous Cell Carcinoma of the Gallbladder
- Sudden Death in an Apparently Healthy Young Man
- Tuberculosis in Kansas, 1992
- The Family and Medical Leave Act



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## ABOUT OUR LOGO

In January 1935, a new logo appeared on the cover of KANSAS MEDICINE for the first time. This device represents two stethoscopes: the original monaural type as used by Laënnec, and the modern binaural variety. The logo was designed expressly for KANSAS MEDICINE by renowned graphic designer Bradbury Thompson, a native of Topeka and friend of two former editors of the journal, Dr. W.M. Mills and Dr. Lucien Pyle. As another former editor, Dr. Orville R. Clark, wrote in January 1955, the logo "has become as much a part of the journal as any of the features on the inside and is something which is ours alone."

Few things in life look as lush — even luscious — as golf courses in spring. These duffers' Edens are filled with promise: the promise of full-blown summer and of a long season of golf games, each of which will, naturally, be better than the last. The courses' grassy hillocks are studies in green, which is represented in countless shades, depending on the time of day, the contour of a slope, the glare from a sand trap.

Ah, sand traps: serpents in the eternal garden, tempting the unsuspecting (in this case, the ball) to damnation. But in this season of eternal-springing hope, it is easy to believe the ball will resist the ageless snare and sail straight and long until it reaches that far-off green. Fore!

Which brings us to our cover illustration of the Kansas City Country Club course, deftly rendered by Jim Hamil. This tranquil scene supports our theory of blessed spring golf. All is serenity. Though they are unseen, we know there are birds in those trees, twittering endlessly, in their enthusiastic spring way. A gentle breeze (not the usual Kansas gust) rustles the neonate leaves of the tall oaks and elms. In the midground a relaxed golfer concentrates on his putt, and another prepares for his turn. In the distance, the stately clubhouse offers traditional comforts, including iced refreshments following an afternoon of warm sun and fresh air.

This is a day when just being on the course is pleasure enough. But in this season of renewed hope, it does not seem unrealistic to expect a low score as well.

## DAVID E. GRAY, M.D.

1916–1993

David E. Gray, M.D., Editor of KANSAS MEDICINE since 1970, died on April 25 following a brief illness. His final Editorial Comment appears on page 120. An article about Dr. Gray's life and career will be published in the June issue.

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# A Matter of Perspective

**T**he voice of Sydney M. Wolfe, M.D., has long been known for pointing out the many sins of the medical profession. There is general truth in some of his complaints, and he is assured of an unending supply of material until the day when medical services can be provided totally by bureaucratic computers and human physicians can be entirely eliminated. Meantime, he will be quoted in various public presentations as a valued critic of this profession. After all, he is part of it, isn't he?



Still, it was a little surprising to note in a recent address he gave to the Federation of State Medical Boards the following statement: "The number of people injured or killed by negligent physician behavior in the United States is certainly as large or larger than the number of people who are injured or killed in attempted or actual homicide."

As soon as our hackles (what we have left of them) settled down, we checked with the office of the KBI and learned that in Kansas in 1991, the most recent year for complete figures, aggravated assaults and batteries numbered 7632, while murders totaled 150. (The first three-quarters of 1992 showed a significant increase in assaults and batteries over the state, but whether the physicians have done their part in keeping up with the times, we haven't heard.)

Well, medical practice serves the Wolfes of the country well. It is the very nature of medical practice that it produces argumentative courses in every phase of medical service. It could be no other way, given the variety of combinations that make up the human organism in health, and these differences are, as often as not, compounded in illness. Since medical research — and practice — are ongoing efforts, there are always events, phases and, in particular, errors which come to light as that very process moves on. Lay commentators in the media meet themselves coming and going as they present the latest advances — as outlined by their chosen experts — alternated with reports of failures and implied condemnation of the profession for allowing such egregious practices. (Even as the smiling "Dr. Mom" cures the family's ailments quickly and inexpensively.)

Dr. Wolfe, as we noted, was addressing the representatives of the various state boards and revealed a touch of petulance in his opening remarks, when he noted that in his 20 years of medical vigilance, this was the first time that group had called upon him to speak. This is, perhaps, understandable, since his interest in medical practice is in ferreting out deficiencies in all branches of medicine. In other words, he feels he was doing their work for them. Of necessity, this places him in a constant adversarial position relative to medical practice, a thought he would undoubtedly deny since he sees his efforts as eminently supportive of the profession — even while he exposes its sins. Not the best job, perhaps, but someone has to do it.

Still, it calls to mind the changes in relationship between the profession and the boards of the governmental units. The Kansas Medical Society struggled for 40 years to get the state to establish a board of registration and examination. That process can be considered the point at which homeopathy moved toward absorption into allopathic medicine (though there are eclectics). But times have changed, and what was once an exclusively medical effort now includes all branches of what the state government groups under the rubric "healing arts."

The Board maintains an important vigilance against medical malfeasance — educational or practical — but the fact is that the quality of day-to-day practice is determined more by medical organizations: national, state, local and specialty. Its basic power lies in its state-directed function of granting, denying or withdrawing the license to practice. Since these functions require examination of the physician's qualifications and abilities, the Board's is an ongoing effort to police (according to its rules) the profession. In this regard, Dr. Wolfe's group views the number of disciplinary actions as an index of the quality of medical service — the more actions, the higher the level of medical practice. But, as has been suggested, the opposite may be the fact: fewer actions indicate the smoothly functioning, highly qualified profession we claim it to be.

Meantime, we'll contemplate changing our name to the KM Satans and the traditional staff of Aesculapius to a dagger dripping with blood. The snake can stay. D.E.G.



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# The Family and Medical Leave Act

**I**n response to the increasing conflict experienced by workers attempting to meet the demands of their jobs and the needs of their families, the Family and Medical Leave Act (FMLA) was enacted in February 1993, to take effect August 3, 1993. It has established the right to unpaid family and medical leave for all workers eligible under the act.



Of interest are the eligibility requirements that must be met for an employee to be considered under the act. The legislation speaks of the terms "circumstances that are critical to the life of a family" and "serious health conditions." This article addresses the meaning of the terms within the legislation.

## Eligibility

The basic eligibility requirement for employers and employees to be included in the FMLA is: that coverage is limited to private employers with 50 or more employees per day during 20 or more weeks in the current or preceding years. Small businesses are therefore exempt from the act.

An employee is eligible if he or she has been employed at least 12 months and has worked at least 1250 hours during that time.

## Medical Certification

Medical certification may be required to support a leave claim for the employee's own serious health condition or for the care of a seriously ill child, parent or spouse. Medical certification to support the leave claim of the employee must state that the employee is unable to perform functions required of his or her work position. If leave is requested to care for a seriously ill child, parent or spouse, the medical certification must include

\*KMS Legal Counsel.

Comments appearing herein are not intended as a substitute for legal analysis or advice. Answers to legal questions depend largely upon the particular facts of a case. The reader is urged to consult an attorney for answers to specific legal questions.

These comments do not necessarily represent the views of KANSAS MEDICINE, or the Kansas Medical Society. For further information, contact Mr. Stratton, 515 S. Kansas, Topeka, KS 66603, 1-800-332-0248.

an estimate as to the time needed to care for the person.

Once in the eligible category, the employee is entitled to 12 weeks of unpaid leave per year; however, the employer may require or the employee may elect to substitute unused paid leave (already provided as an option by the employer) for the unpaid leave, as provided under FMLA. Shorter periods of paid leave cannot be substituted for longer periods of unpaid leave.

Leave is granted for "circumstances that are critical to the life of a family." The employee is assured of job security during the leave period. That is, the same position or equivalent will be available to the employee upon return from leave.

According to the FMLA, circumstances "critical to the life of a family" include:

1. birth of an employee's child;
2. placement of a child with the employee for adoption or foster care;
3. employee's need to care for a child, spouse or parent with a serious health condition;
4. employee's inability to perform the normal job functions because of a serious health condition.

## Serious Health Condition

The last two circumstances of the list above, meriting granting of leave under the act, include the phrase "serious medical condition." The legislature purposely drafted the phrase broadly, to encompass various types of physical and mental conditions.

For leave to care for an ill child, spouse or parent (#3 above), the serious health condition includes conditions and illnesses that render the child, spouse or parent unable to participate in their regular daily activities.

In reference to an employee being eligible for leave (circumstance #4 above), the "condition" is to cover conditions and illnesses that affect an employee such that he or she must be absent from work on a recurring basis. The act is not intended to cover short-term conditions in which the recovery period is very brief.

The FMLA lists examples of "serious health conditions," including: heart conditions, strokes, severe respiratory conditions, spinal injuries, severe nervous disorders, pneumonia, miscarriages,



childbirth, and recovery from childbirth or from injuries caused by accidents.

If the condition doesn't seem to fit in any of the categories, a general test is used to determine if it is a "serious health condition." The test is this: if either the condition itself for the treatment thereof requires that the employee be absent from work on a recurring basis or for more than a "few days," it is likely to be a "serious health condition." Such conditions often involve incapacitated or continuing treatment or supervision by a health care provider.

### Rights upon Returning from Leave

Upon returning from leave, the employee is to be restored to his or her previous position or the equivalent of that position and its benefits.

The act also specifies that an employer cannot deprive an employee of benefits accrued before the leave was taken. Upon the employee's return from leave, the employer is to restore the benefits and rights the employee would have had, had the employee not taken the leave. Health insurance benefits, if provided before the leave, are to be maintained as if the employment had been continuous, and the leave not been taken.

The rights under the FMLA are enforceable through civil action. Such action may be brought by employees themselves, or by the Secretary of Labor.

A number of commentators have predicted that the eligibility requirements will be lowered in future years to expand the coverage.

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**Action:** Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage, although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalamic centers and release of posterior pituitary hormone.

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it; however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

**Indications:** Yocon<sup>®</sup> is indicated as a sympatholytic and mydriatic. It may have activity as an aphrodisiac.

**Contraindications:** Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

**Warning:** Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

**Adverse Reactions:** Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral alpha-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.<sup>1,2</sup> Also dizziness, headache, skin flushing reported when used orally.<sup>1,3</sup>

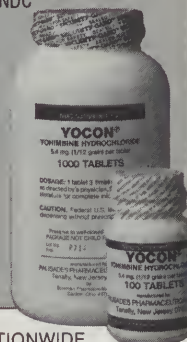
**Dosage and Administration:** Experimental dosage reported in treatment of erectile impotence.<sup>1,3,4</sup> 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to 1/2 tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.<sup>3</sup>

**How Supplied:** Oral tablets of Yocon<sup>®</sup> 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.

#### References:

1. A. Morales et al., New England Journal of Medicine: 1221, November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

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# KMSA Transfer of Leadership

TERRIE BROWNING

**T**he KMS Auxiliary's gavel of leadership has been passed to Cathy Wilcox, whose new ideas and commitment will carry our organization toward the future. I hope many of you were present at the second annual joint installation of the KMS and KMSA presidents in Topeka on May 1. What a wonderful evening!

Let me tell you about our dynamic, caring new president. Cathy met her husband, Hays orthopedic surgeon Howard Wilcox, on a blind date when both were still students at the University of Kansas. They remain staunch KU supporters. Cathy received a degree in speech pathology, working in that field for several years.

Commitment is important to both. Howard Wilcox has now been practicing in Hays for 18 years, and this summer Cathy and Howard will celebrate their 27th wedding anniversary. Brennan, their 22-year-old son, graduates from KU this month with a degree in psychology. Kirsten, who is 20, has just completed her sophomore year at KU.

For eight years Cathy has been the area representative and orientation leader for Youth for Understanding (YFU), an international exchange program for high school students. Through this experience, Cathy has learned many cultural differences — and similarities — and has developed an abiding appreciation for teenagers from around the world.

Cathy has divided her volunteer hours among many local groups. For example, she has served on the PTA, the parent advisory council, the arts council, physician search committee, medical auxiliary, and the hospice committee for Hays Medical Center. She is an active member of the First United Methodist Church.

Cathy's theme for the year is: "Facing Change with Hope." Her goals will include continuing the working partnership already begun with the medical society in areas of legislation, a positive voice for medicine and the issue of domestic violence. She also will be focusing our energy in new directions. For example, one new project will promote communication with resident physician support groups. She plans to bring them the message that "when you finish your residency, there



*Terrie Browning*



*Cathy Wilcox*

is another support group for you that understands medical families."

In the area of health promotion, Cathy will target:

- wellness and lifestyle changes;
- child abuse prevention. Through a coalition with the Kansas Children's Service League, we will sponsor the Governor's Conference on Child Abuse Prevention;
- women's health issues, especially breast cancer awareness;
- ongoing programs, such as The Caring Program for Children and the Bone Marrow Donation Registry.

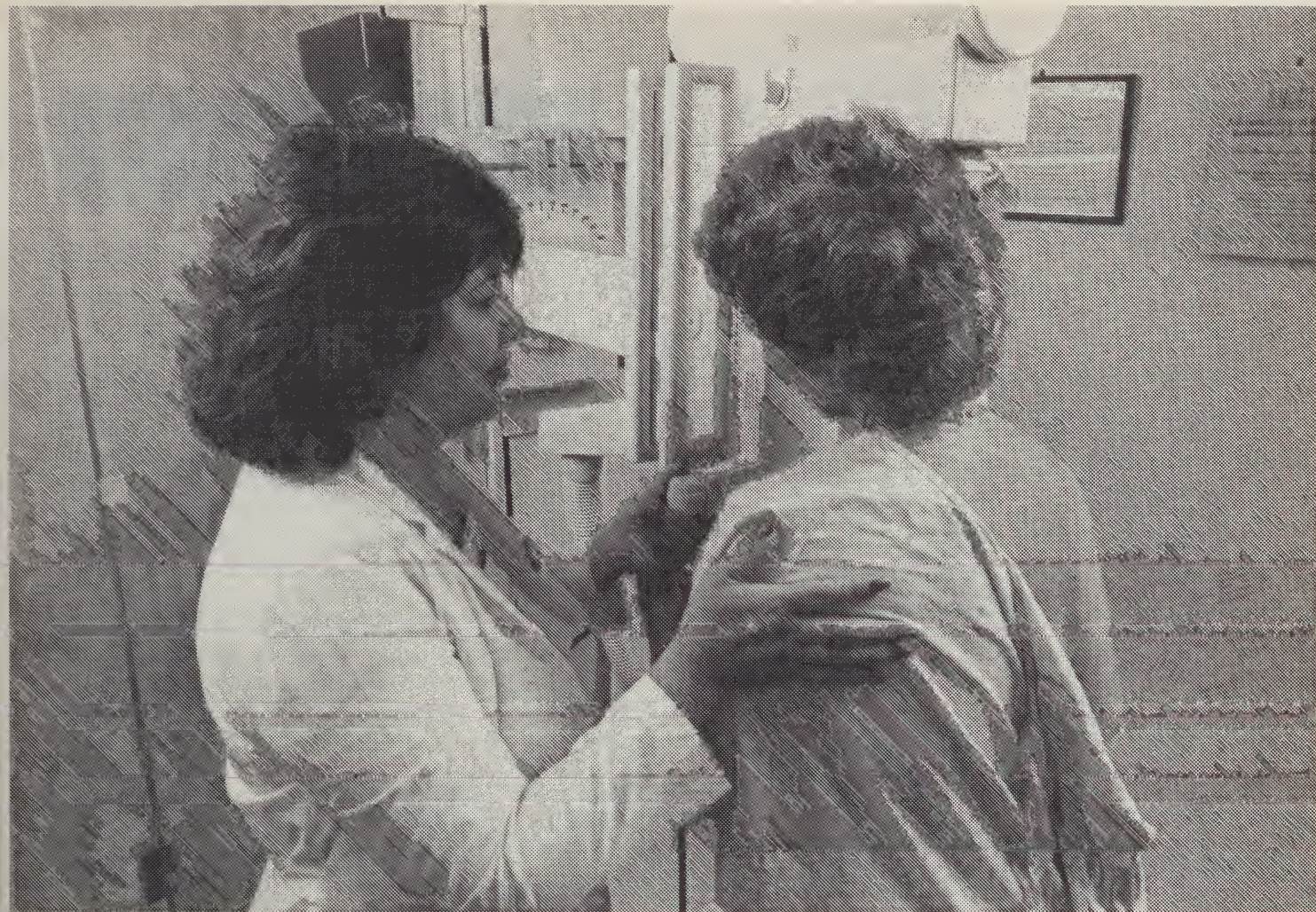
Cathy has been proactive in the area of legislative affairs. She has appointed a large committee with members scattered across the entire state ready to respond to calls from KMS regarding legislative alerts and call-to-action meetings.

Cathy wants to provide a service to members of the auxiliary and physicians who find themselves in the midst of malpractice litigation. Her committee chairman, Cindy Myers, is willing to provide support and understanding, as this most difficult situation involves not only you — but your whole family.

I commit the leadership of the KMSA to Cathy Wilcox and know it is in good hands. Physicians of Kansas, I urge you to meet this dynamic leader at your council district meetings across the state. She is a hard worker for you.

A handwritten signature in cursive script that reads "Terrie Browning".





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## CME/SCIENTIFIC SESSIONS

Following is a listing of meetings and regional seminars of which KANSAS MEDICINE has been notified.

**Alzheimer's Disease**, June 11-12, Washington University, St. Louis. Call 800-325-9862.

**Biliary Tract Disease**, June 11, Ed Bixby Institute, Kansas City, Mo. Call 800-821-5140, ext. 4306.

**Selected Problems in the Lower Urinary Tract**, June 12, Ed Bixby Institute. Call 800-821-5140, ext. 4306.

**Allergic Diseases of the Upper & Lower Airways**, June 17-18, Washington University, St. Louis. Call 800-325-9862.

**Broaching the Biological Barriers to Transplantation**, June 26, Rush-Presbyterian-St. Luke's Medical Center, Chicago. Call 312-942-6242.

**Current Concepts in Cardiology**, July 18-22, Lake Tahoe (sponsor: UC-Davis). Call 916-734-5390.

**International College of Surgeons, U.S. Section, Annual Meeting**, July 27-Aug. 1, Seattle. Call 312-787-6274.

**Pain Management**, August 6, Ed Bixby Institute. Call 800-821-5140, ext. 4306.

**Society of Magnetic Resonance in Medicine, Scientific Meeting**, August 14-20, New York. Call 510-841-1899.

## THE WAY IT WAS

(From the *Journal of the Kansas Medical Society*, April 1925.)

### NO NEW BUILDINGS AT ROSEDALE

The medical school at Rosedale failed to get an appropriation from the last legislature for any new buildings whatever. It is not improbable that no further appropriations will be made for . . . Rosedale. The Chancellor . . . conveyed to the members of the Ways and Means Committee that ultimately — probably within the next ten years — the medical school would have to be moved to Lawrence.

From various statements [and] from all the information obtainable, it is not a question for the medical profession to decide . . . but has been decided by Mr. Flexner of the Rockefeller Foundation, Dr. Colwell, Secretary of the Council on Medical Education of the American Medical Association, and Dr. Zapffe, secretary of the Association of American Medical Colleges.

Before the session of the legislature one was presumably safe in assuming that the school had been located permanently because there had recently been no talk that suggested dissatisfaction with the present location, and because those men in the profession who had been most actively opposed to the original location of the School at Rosedale have long ago submitted to what appeared to be the inevitable.

It was conceivable that the almost unanimous decision of the profession would not be entirely ignored, but something very important had been omitted in the evolution of the conception. The opinions, the desires, the efforts of the medical profession of Kansas are of no significance, as against the opinion of Mr. Flexner, who has behind him the millions of the Rockefeller Foundation. If Mr. Flexner says that none of these millions can be given to a divided school and that probably it would be better to unite our school at Lawrence, what else can we do but move it to Lawrence? . . .

It is not fair to blame the Chancellor for giving the committees his honest opinion . . . stating what he believed was the best policy . . . but to many of us it will seem that it was unfortunate for the Medical School that he held those convictions.

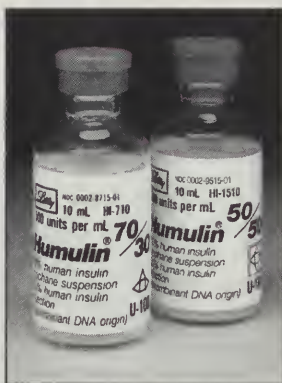





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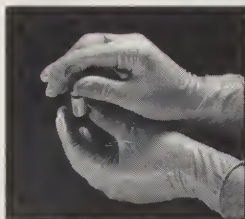


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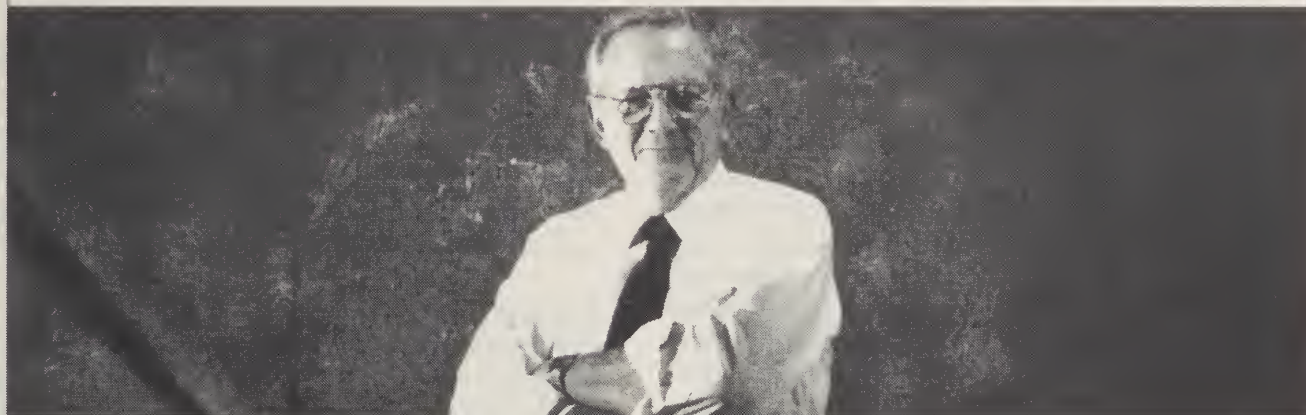


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# Evaluation of Neoplastic Spinal Cord Compressions

PETER J. VAN VELDHUIZEN, M.D.,\* AND RONALD L. STEPHENS, M.D.,\* *Kansas City*

**S**pinal cord compressions secondary to malignancy represent a common oncologic emergency, with the incidence reported to be 5 to 10% in all patients with cancer.<sup>1</sup> As systemic chemotherapy improves and oncologic patients live longer with their disease, the incidence of neurologic involvement will continue to increase. At the time of diagnosis, patients frequently have advanced neurologic deficits and often complete paraplegia. Greater than 50% of these patients will not be able to ambulate, even after treatment.<sup>2</sup> In one series, 60% of patients who were ambulatory at the time of diagnosis remained so after treatment, whereas only 7% of paraplegic patients became ambulatory following therapy.<sup>3</sup> Thus, the importance of early diagnosis cannot be overemphasized.

The difficulty arises in determining at what point a more extensive evaluation of the spinal cord should be performed. In most series, the most common presenting symptom is back pain, occurring in greater than 90% of all spinal cord compressions (SCCs).<sup>4,5</sup> Back pain, however, is nonspecific and even in the oncologic patient may be of benign musculoskeletal origin, rather than metastatic disease. Traditionally, when an SCC is suspected plain radiographs of the spine and bone scintigraphy have been obtained prior to performing the more invasive and costly myelogram. The majority of episodes of cord compression are caused by invasion of the epidural space by metastases in contiguous bone and, therefore, abnormalities should be present on bone scan and plain radiographs. Less commonly, the SCC is caused by intramedullary metastases or by invasion through intravertebral foramina.<sup>6</sup>

The advent of the MRI scan has provided a sensitive and specific noninvasive method for evaluating epidural metastasis, but it remains an

expensive test and is not always readily available in small centers.<sup>7,8</sup> This retrospective study reassesses the role of the plain radiograph and bone in the new era of MRI scanning.

## Patients and Methods

The hospital records of all patients with a discharge diagnosis of either neoplastic or metastatic SCC from January 1984 through January 1990 were reviewed. Included in the analysis were data on tumor type, clinical presentation, radiologic findings and outcome. All patients had either an SCC or an epidural metastasis documented by either CT scan, myelogram or MRI scan. All bone scans and plain radiographs included in the analysis were performed within two weeks of the documented SCC. All radiograph data were obtained from the first official radiologic report. Plain films were considered positive if there were any changes suspicious for tumor involvement at the level of SCC. Bone scans were considered positive if there was increased uptake at the level of compression.

## Results

In this time period there were a total of 68 patients with 73 episodes of SCC. One patient had three admissions, and two patients had two admissions for SCC. In each of the five recurrent episodes the compression was located at a different site in the vertebral column. There were 35 female and 33 male patients. The age range was 29 to 85, with a mean of 64 years. The most common malignancies were prostate, breast and lung, which accounted for 68% of all episodes of SCC (Table 1). The most common presenting symptom was back pain, which was present in 91% (Table 2).

Sixty-one patients (84%) had a plain film of the spine performed within two weeks of their documented SCC. Of these, 56 (92%) demonstrated changes either suspicious for or diagnostic of tumor involvement. In fourteen of these films, the changes were described as suspicious only and would have required further evaluation for defini-

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TABLE 1  
TYPE OF PRIMARY TUMOR

<i>Tumor</i>	<i>Number (%)</i> *
Breast	18 (26)
Lung	16 (24)
Prostate	12 (18)
Multiple Myeloma	4 (6)
Renal Cell	4 (6)
Unknown Primary	4 (6)
Lymphoma	3 (4)
Sarcoma	3 (4)
Other	4 (6)

\*A total of 68 patients.

tive diagnosis. Most commonly there was bony involvement and/or compression of the vertebral body at the level of compression, although rarely only involvement of the adjacent pedicles or transverse processes were seen. Of the 56 positive radiographs, 29 (52%) had only one area of bony involvement; that is, tumor involvement of one or two contiguous vertebrae at the level of SCC. The remaining 27 (48%) positive films had multiple vertebral metastases. In 11 (41%) of these 27 patients, the area of most involvement correlated directly with the level of compression.

Five patients (8%) had negative plain films. One patient had an intradural tumor with no bony involvement seen on MRI scan, and one patient had a large epidural metastasis with only minimal bony involvement seen on the MRI scan. Two patients had multiple myeloma with only bony demineralization seen on plain films. An additional patient had CML with a granulocytic sarcoma. Eleven of the twelve patients who presented with back pain alone had plain films, all of which were positive.

A bone scan was performed on 59 (81%) of all patients evaluated. Forty-seven (80%) were positive, with uptake at the level of symptomatic SCC. In fourteen (30%) there was only one area of

TABLE 2  
PRESENTING SYMPTOMS

<i>Symptom</i>	<i>Number (%)</i> *
Back Pain	66 (91)
Weakness	53 (71)
Paresthesias	29 (40)
Incontinence	15 (20)
Back Pain (as only symptom)	12 (16)

\*A total of 73 episodes of cord compression.

increased uptake in the spine. The remaining positive scans demonstrated one or more areas of increased uptake in addition to the area of compression. In the twelve negative scans, seven patients had near total vertebral body replacement at the level of compression, suggesting that there may not have been any active bony turnover, which is required for a positive scan.

A direct comparison of the plain film and bone scan results was also performed. Fifty-three patients had both studies completed, and in forty (75%) both were positive. In 33 (82%) of these 40 patients, findings on both studies were essentially equal. Eight patients (15%) had positive plain films with a negative bone scan. In five of these films there was near total vertebral body replacement with tumor at the level of SCC. In two there was only minimal bony involvement on plain film. An additional patient with a negative bone scan had multiple myeloma with a lytic lesion seen on plain film. One patient with multiple myeloma had a positive bone scan and negative plain film.

Four patients (7%) had both a negative bone scan and plain radiograph. One of these involved intradural tumor only, one was in a case of myeloma, and one in a case of CML with granulocytic sarcoma.

## Discussion

The MRI scan has become the procedure of choice for the definitive diagnosis of a neoplastic spinal cord compression.<sup>7,8</sup> It is better than the CT/myelogram in identifying early bony lesions and assessing the paravertebral area. The development of gadolinium as a contrast agent has improved its ability to identify intramedullary cord lesions.<sup>9</sup> Difficulties include a 1 to 2% incidence of claustrophobia, and metallic objects such as orthopedic rods interfere with the study. Patients with back pain can have difficulty lying motionless for the period required to complete the study.<sup>10</sup>

Patients who present with neurologic symptoms should have an MRI scan of the spine or, if indicated, a myelogram regardless of the result of the plain film or bone scan. However, localizing the level of compression is often difficult with a neurologic exam alone. Even when a sensory level is present, it may be several segments below the actual level of compression. In these instances the plain film may provide useful information to help localize the lesion prior to obtaining the MRI scan or myelogram.

Frequently, oncologic patients present with back pain alone and a normal neurologic exam.

It is not feasible and cost-effective to obtain an MRI scan in all of these patients. However, these are the patients who need to be evaluated and observed closely, in order to ensure early diagnosis. In this group of patients the plain film may aid in the decision on when to obtain a more definitive study. Patients with a significant abnormality on plain film or an increase in the degree of back pain should have a more definitive study. These patients also need careful observation for the development of any neurologic symptoms. The bone scan is better reserved for patients with a negative plain film in whom early bony metastases or another etiology of their back pain is suspected.

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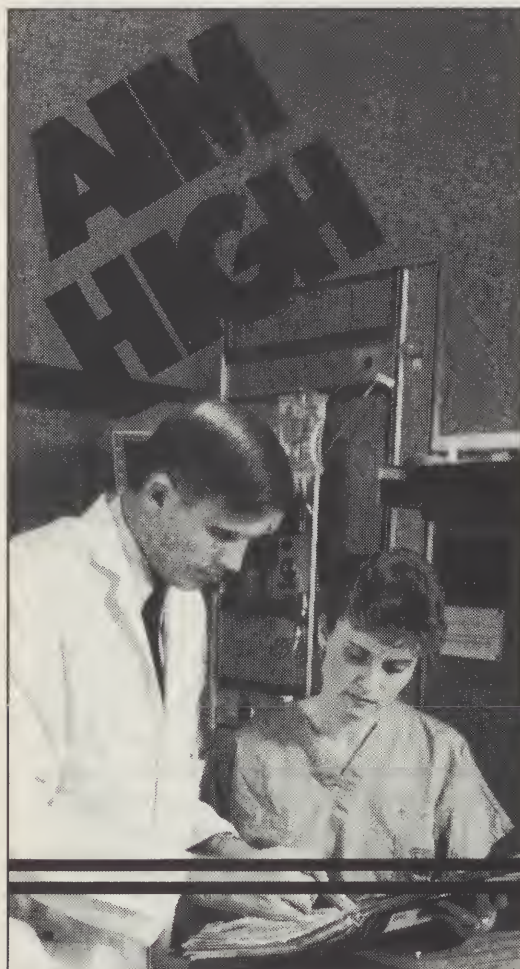
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# Squamous Cell Carcinoma of the Gallbladder

JAMES WILLCOX, M.D., AND F. C. CHANG, M.D.,\* *Wichita*

**C**arcinoma of the gallbladder has long been recognized as a difficult disease to diagnose and treat. The disease is relatively uncommon, but is found consistently in surgical centers.<sup>1</sup> The majority of cases are adenocarcinomas, with smaller percentages classified as undifferentiated and squamous cell mixtures.<sup>1-10</sup> Pure squamous cell carcinomas comprise a small but relatively consistent histologic subtype of gallbladder carcinoma.<sup>1-4,7-11</sup> The purpose of this paper is to describe the only case of this type recorded in our tumor registry during the past 18 years. Of interest also is the fact that this patient was initially thought to have carcinoma of the hepatic flexure of the colon.

## Case Report

An 82-year-old woman presented with a one-month history of vague right upper-quadrant pain, and a one-year history of progressive weight loss with fatigue. She denied fever, chills and melena. She had no previous operations, but 20 years previously had experienced a bout of probable cholecystitis. Family history was remarkable for colon cancer in siblings and for prostate cancer in a 30-year-old son.

Physical examination revealed an obese female with diffuse fullness in the right upper quadrant, which was tender to deep palpation. She was afebrile and did not exhibit jaundice. Laboratory studies at admission indicated a white blood cell count of 10,900/mm<sup>3</sup>, and a hemoglobin of 11.7 grams. Sodium level was 133 mEq/L, and potassium 2.9 mEq/L; liver function studies were within normal limits. Barium enema revealed a large ulcerated mass in the hepatic flexure of the colon, believed to be consistent with an ulcerated colonic carcinoma. Abdominal CT scan indicated a 6×9 cm area of increased density in the right

upper quadrant. Several gallstones were detected, one of which appeared to contain an air fluid level. Flexible sigmoidoscopy was normal.

At laparotomy, a 12-cm. mass was found arising from the gallbladder and encompassing the hepatic flexure of the colon. Numerous 2-3 cm. stones were present in the area of the gallbladder lumen. Cholecystectomy was first performed; however, the tumor could not be entirely resected from the liver bed. In addition, the tumor was densely adherent and infiltrated the head of the pancreas and duodenum. The mass was incompletely dissected away from these structures, and surgical clips were placed to mark the residual tumor. A right hemicolectomy with primary anastomosis was also performed to remove the bulk of the tumor.

Upon gross examination, the tumor was grey-white with areas of focal necrosis; actual gallbladder structure could not be appreciated. Microscopic examination revealed a moderately differentiated (grade II) squamous cell carcinoma of the gallbladder; all 16 lymph nodes retrieved from the specimen were negative for malignancy. Postoperatively, the patient did well and was discharged on the 14th day, to be followed by her primary care physician and a radiation oncologist.

The radiation oncologist treated the patient with a total of 5000 cGy in 31 fractions at a daily incremental dose of 180 cGy for four days. This dose was lowered to 160 cGy due to nausea, but otherwise treatment was tolerated well. She was subsequently admitted to the psychiatric ward for severe depression and failure to thrive at home. Four months postoperatively she developed abdominal pain and fever, which was clinically believed to be consistent with an abscess. CT scan at that time revealed a low-density area in the right upper quadrant, but no obvious increase in tumor size.

The patient was returned to the operating room for drainage of the abscess. Dense adhesions were present between the small bowel and gallbladder bed, and a palpable mass was present

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at the head of the pancreas. A subhepatic abscess containing necrotic and purulent debris was drained. Generalized radiation change was present throughout the area. No evidence of other metastatic sites was noted. Specimens from the gallbladder bed and head of the pancreas were identified as recurrent moderately differentiated squamous cell carcinoma. The patient subsequently became obtunded and expired on the 16th postoperative day, five months after the original admission.

### Discussion

Squamous cell carcinoma of the gallbladder is an uncommon histologic type of gallbladder carcinoma. In series of gallbladder carcinoma the incidence varies from 0 to 12%.<sup>1-4,6,9-12</sup> These figures coincide with the experience at our institution, where 17 cases of carcinoma of the gallbladder were recorded in our tumor registry during the past 18 years. With the exception of our reported patient, the remaining 16 cases were adenocarcinoma, which results in a 5.9% incidence of squa-

mous cell carcinoma of the gallbladder. Squamous cell components, however, are not uncommon in mixed tumors, especially along the metastasizing margins of adenocarcinoma.<sup>5</sup> This occurrence was recognized as early as 1909, when three cases were reported in London.<sup>13</sup> Black, in a study of Southwest American Indians, identified fully 35% of tumors in patients with gallbladder carcinoma as having a squamous cell component.<sup>5</sup> The reason for this large difference in incidence is most likely a reflection of the study population.

The case presented here, like Karasawa's,<sup>10</sup> suggests the primary spread of squamous cell carcinoma of the gallbladder is by direct extension, without metastasis to lymph nodes. We agree with others<sup>7,10</sup> in suggesting that squamous cell carcinoma may be less aggressive than adenocarcinoma. The overall cure rate for all carcinomas of the gallbladder (5%) remains dismal, and it has been reported that squamous cell carcinoma has a worse prognosis than adenocarcinoma.<sup>14,15</sup> The reason for this difference may be the inclusion of adenosquamous carcinomas in the latter studies, and the advanced stages of diagnosis in most cases of squamous cell carcinoma.

Radical surgery in patients with gallbladder carcinoma has been recommended for years; however, results of radical surgery have been mixed.<sup>1,4-6,9,16-17</sup> These reports, however, do not differentiate histologic subtypes with the mode of therapy. Cholecystectomy with wedge resection of the liver and involved adjacent organs should be considered in patients with squamous cell carcinoma of the gallbladder, as the tumor is generally only locally invasive and quite large at the time of discovery.<sup>10</sup> This mode of therapy may offer the only hope of cure. The paucity of reported experience with adjunctive treatments of this tumor makes meaningful comment difficult. Radiation therapy in this patient did not alter survival beyond that expected for her stage of disease. This case is presented as a reminder that, although rare, large primary tumors other than adenocarcinoma of the colon may exist in the right upper quadrant.

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A list of references may be obtained from Dr. Chang.



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# Sudden Death in an Apparently Healthy Young Man

FRANCIS E. CUPPAGE, M.D., AND FABIOLA BALAREZO, M.D., *Kansas City*

**A** fifteen-year-old male, who was thought previously to be in good health, suddenly collapsed while playing basketball in a neighborhood game. Resuscitation was attempted while he was being transported to the KU Medical Center, where he was pronounced dead. The patient had no known significant family history and had no known underlying disease to explain the sudden collapse. As part of the death investigation, the district coroner authorized an autopsy by the Department of Pathology and Laboratory Medicine of the University of Kansas Medical Center.

## Autopsy Findings

At autopsy the only finding related to a possible cause of death was an enlarged heart, weighing 360 grams, with prominent dilation of the right ventricle. Otherwise, the shape and configuration of the heart were normal. Upon opening the right ventricle, the prosectors noted an unusual arrangement of tissues within its wall. Rather than the usual epicardial fat and uniform cardiac muscle, there was an admixture of adipose tissue, fibrous connective tissue and loosely arranged cardiac muscle throughout the entire thickness of the right ventricle, most prominent in the outflow tract and pulmonary infundibulum (Figure 1). The remaining septal and left ventricular myocardium, valves and atria appeared unaltered. No other cardiac defects were noted.

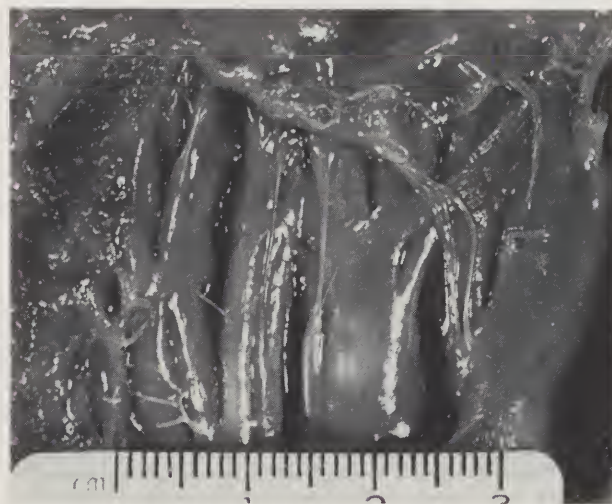
Microscopic examination of the right ventricular myocardium revealed a marked disarray of fibers (Figure 2). Both adipose tissue and fibrous connective tissue were found throughout the entire thickness of the ventricular wall. Cardiac muscle fibers were separated and arranged haphazardly, and were of variable size. Some were hypertrophied, while others appeared smaller

than expected. Within the myocardium and endocardium, there was a multifocal increase in alcian blue staining mucopolysaccharide. The coronary arteries, conduction system and myocardium, other than that of the right ventricle, were normal.

Accessory findings at autopsy included calcified granulomas involving the lung, one hilar lymph node, the liver and the spleen. No organisms were identified using special stains. Drug screen performed upon the urine was negative.

## Comments

Sudden, unexpected death in an otherwise healthy individual recurs in our society. Death investigation of these instances by use of forensic autopsies has provided us with the cause and manner of deaths in most instances. Accurate determination of the cause of death, in this case likely sudden arrhythmia and acute heart failure, and of the manner of death, in this instance natural cause or existing disease, is essential for several reasons. First, the family needs reassurance that the death was explainable and perhaps unavoidable. If the



*Figure 1. Right ventricle of heart at autopsy. The myocardium is irregular and contains both adipose tissue and fibrous connective tissue throughout.*

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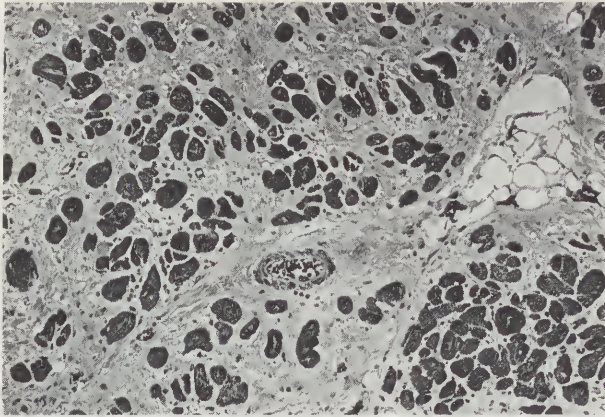


Figure 2. Photomicrograph of right ventricular myocardium with adipose tissue and fibrous connective tissue interspersed with myocardial cells arranged in a haphazard fashion. Trichrome stain  $\times 200$ .

natural disease is either hereditary or contagious, the family needs to know this to prevent further occurrence. In this case, the siblings of the deceased should be evaluated for a similar congenital cardiac lesion that could lead to a similar death in a relative. Second, the registration of deaths through the use of autopsies is the best way to determine accurately the prevalence of disease within the population. Finally, death investigation with autopsies in these instances can exclude violent death, an important determination for the justice system.

The disease entity causing the death of this patient is termed right ventricular dysplasia syndrome.<sup>1,2</sup> The entity may be familial and, therefore, it is of utmost importance to be able to establish its presence and to counsel the family regarding the possible existence in relatives. Most often the dysplasia is non-familial and felt to be non-genetic.<sup>1</sup> The entity often initially becomes apparent in the second or third decade and often during sporting events when physical exertion predisposes to cardiac functional impairment.<sup>3-6</sup> Apparently, the final episode is a fatal cardiac arrhythmia, possibly due to the dysplastic myocardium with abnormal mucopolysaccharide ground substance and disarray of cardiac muscle cells. With a high degree of suspicion, such as with family members of an individual who has died of this entity, this lesion can be diagnosed using a series of cardiac tests.<sup>2</sup> The entity should always be considered in this age group in patients with cardiac arrhythmia. Our preoccupation with exercise and conditioning, as well as with sporting events necessitating great exertion, should alert us to the possibility of this entity causing unexpected

cardiac death. For this reason, perhaps, we should consider preparticipation screening to exclude this, as well as other more commonly occurring causes of sudden, unexpected cardiac death.<sup>5</sup>

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### Nonionizing Electromagnetic Radiation

To the Editor:

Our research group is in the process of accumulating data on the human health effects of non-ionizing electromagnetic frequencies in the range between electric power transmission frequencies and microwave frequencies. Although there has been a great deal of interest and research on this subject, the information available . . . does not permit us to conclude that there are serious health effects.

We believe there is an increase in awareness of both physicians and patients that NER may have some human health effects, with the most prominent being links to neoplastic disease. Of specific interest to us is the potential for collecting cases or clusters of cases recognized by practicing physicians in the United States, which may be related to such exposure.

We would be interested in hearing from any physicians or physician groups that may have experience with this problem.

Joseph R. Salvatore, M.D., Director  
*The National Registry for the Health  
 Effects of Nonionizing Radiation*  
 300 Tollgate Rd., Warwick, RI 02886



# Tuberculosis in Kansas, 1992

**T**here were 56 cases of tuberculosis (TB) reported in Kansas in 1992. This is a decrease of 10% from the 1991 total. The annual rate for TB in the state in 1992 was 2.2 per 100,000 population (Figure 1). The U.S. rate in 1991 was 10.4 per 100,000. Cases were reported from 22 counties in Kansas (Figure 2).

Kansas patients with TB ranged in age from 1 to 94 years old with a median age of 53 years. In general, the age-specific rate for TB increased with increasing age (Figure 3). Males had a TB rate 3 times that of females. The TB rate was 28.3 cases per 100,000 for Asians, 9.6 per 100,000 for Hispanics, 9.1 per 100,000 for American Indians, 5.6 per 100,000 for blacks and 1.7 per 100,000 for whites. Thirteen (23%) of the patients with TB were originally from outside the U.S. (Mexico, 4; Vietnam, 4; India, 2; China, 1; Pakistan, 1; and Uganda, 1).

Forty-five (80%) of the TB cases were pulmonary; the remaining 11 cases (20%) were extrapulmonary. Of the patients with pulmonary TB, 23 (51%) were smear-positive and 35 (78%) were culture-positive.

Due to concerns about multidrug-resistant tuberculosis, the American Thoracic Society, the American Academy of Pediatrics, the Infectious Disease Society of America and the Centers for Disease Control and Prevention are now recommending that all patients diagnosed with TB be started on at least three drugs (*Am Rev Respir Dis* 1992;146:1623-33). The usual regimen for uncomplicated tuberculosis is 2 months of isoniazid, rifampin and pyrazinamide, followed by 4 months of isoniazid and rifampin. If there is a possibility of primary resistance to isoniazid, ethambutol or streptomycin should be included in the initial regimen until drug susceptibility results are available.

The Tuberculosis Section in the Bureau of Disease Control can supply TB medications at no charge to patients with TB infection or disease who are reported to local health departments.

Reported by: Tuberculosis Section, Bureau of Disease Control, Kansas Department of Health and Environment.

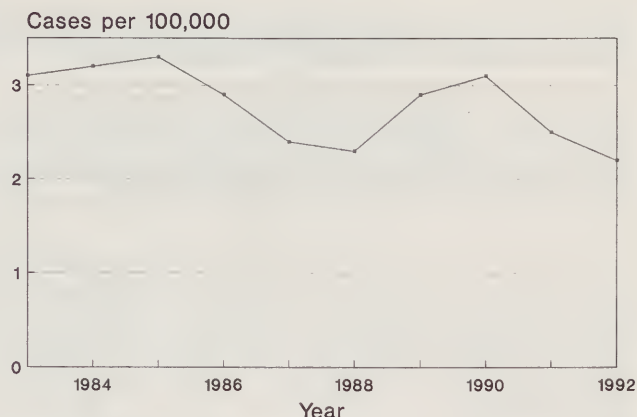


Figure 1. Tuberculosis rate by year in Kansas, 1983-1992.

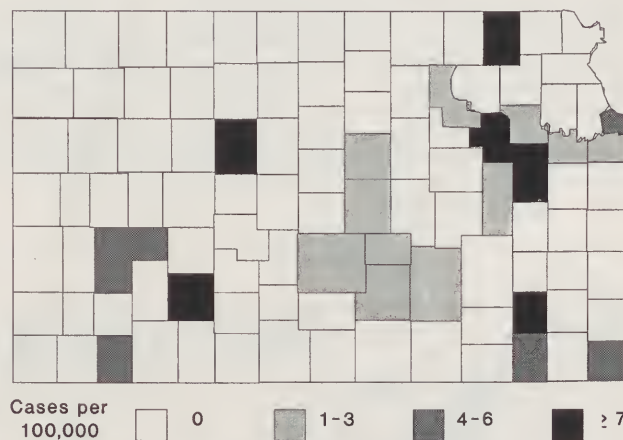


Figure 2. Tuberculosis rate by county: Kansas, 1992.

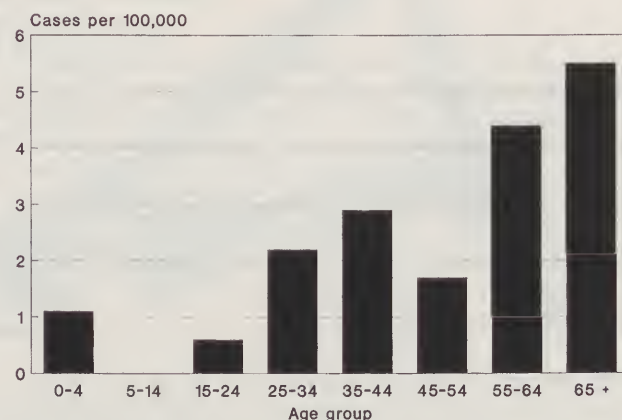


Figure 3. Tuberculosis rate by age group: Kansas, 1992.

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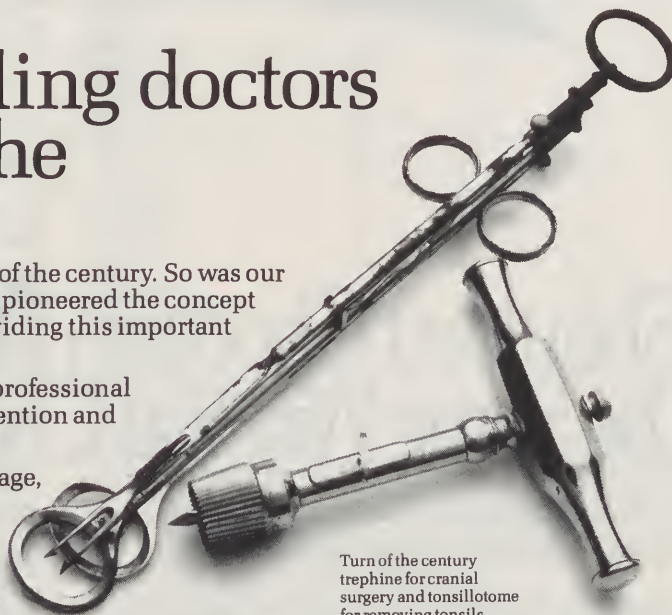
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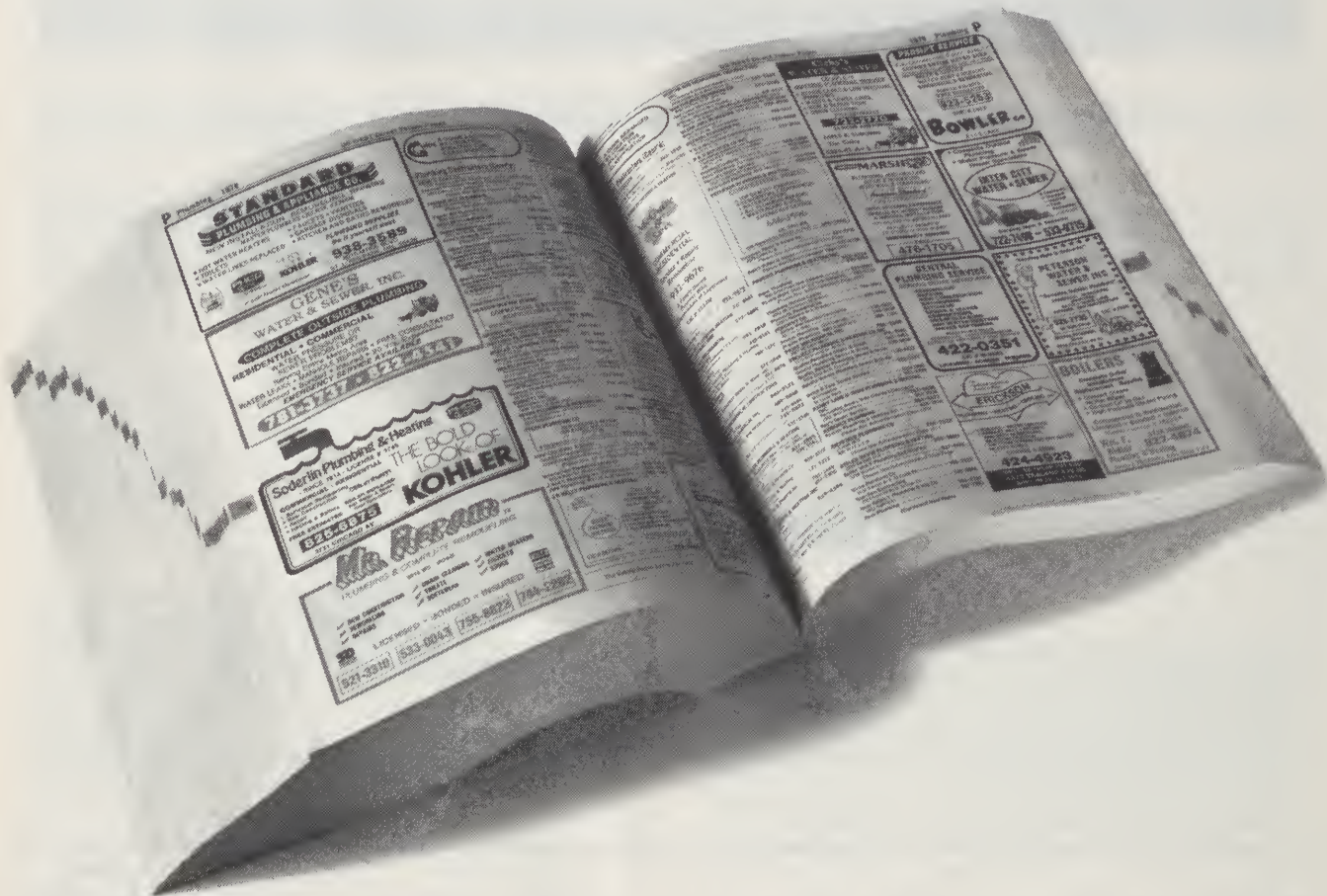
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**CONTRAINDICATIONS**

Hypersensitivity to any component of this medication.

Active liver disease or unexplained, persistent elevations in liver function tests (see WARNINGS).

**Pregnancy and lactation.** Atherosclerosis is a chronic process and discontinuation of lipid-lowering drugs during pregnancy should have little impact on the outcome of long-term therapy of primary hypercholesterolemia. Cholesterol and other products of cholesterol biosynthesis are essential components for fetal development (including synthesis of steroids and cell membranes). Since HMG-CoA reductase inhibitors decrease cholesterol synthesis and possibly the synthesis of other biologically active substances derived from cholesterol, they may cause fetal harm when administered to pregnant women. Therefore, HMG-CoA reductase inhibitors are contraindicated during pregnancy and in nursing mothers. **Pravastatin should be administered to women of childbearing age only when such patients are highly unlikely to conceive and have been informed of the potential hazards.** If the patient becomes pregnant while taking this class of drug, therapy should be discontinued and the patient apprised of the potential hazard to the fetus.

**WARNINGS**

**Liver Enzymes:** HMG-CoA reductase inhibitors, like some other lipid-lowering therapies, have been associated with biochemical abnormalities of liver function. Increases of serum transaminase (ALT, AST) values to more than 3 times the upper limit of normal occurring on 2 or more (not necessarily sequential) occasions have been reported in 1.3% of patients treated with pravastatin in the U.S. over an average period of 18 months. These abnormalities were not associated with cholestasis and did not appear to be related to treatment duration. In those patients in whom these abnormalities were believed to be related to pravastatin and who were discontinued from therapy, the transaminase levels usually fell slowly to pretreatment levels. These biochemical findings are usually asymptomatic although worldwide experience indicates that anorexia, weakness, and/or abdominal pain may also be present in rare patients.

As with other lipid-lowering agents, liver function tests should be performed during therapy with pravastatin. Serum aminotransferases, including ALT (SGPT), should be monitored before treatment begins, every six weeks for the first three months, every eight weeks during the remainder of the first year, and periodically thereafter (e.g., at about six-month intervals). Special attention should be given to patients who develop increased transaminase levels. Liver function tests should be repeated to confirm an elevation and subsequently monitored at more frequent intervals. If increases in AST and ALT equal or exceed three times the upper limit of normal and persist, then therapy should be discontinued. Persistence of significant aminotransferase elevations following discontinuation of therapy may warrant consideration of liver biopsy.

Active liver disease or unexplained transaminase elevations are contraindications to the use of pravastatin (see CONTRAINDICATIONS). Caution should be exercised when pravastatin is administered to patients with a history of liver disease or heavy alcohol ingestion (see CLINICAL PHARMACOLOGY: Pharmacokinetics/Metabolism). Such patients should be closely monitored, started at the lower end of the recommended dosing range, and titrated to the desired therapeutic effect.

**Skeletal Muscle: Rhabdomyolysis with renal dysfunction secondary to myoglobinuria has been reported with pravastatin and other drugs in this class.** Uncomplicated myalgia has also been reported in pravastatin-treated patients (see ADVERSE REACTIONS). Myopathy, defined as muscle aching or muscle weakness in conjunction with increases in creatine phosphokinase (CPK) values to greater than 10 times the upper limit of normal was reported to be possibly due to pravastatin in only one patient in clinical trials (<0.1%). Myopathy should be considered in any patient with diffuse myalgias, muscle tenderness or weakness, and/or marked elevation of CPK. Patients should be advised to report promptly unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever. **Pravastatin therapy should be discontinued if markedly elevated CPK levels occur or myopathy is diagnosed or suspected. Pravastatin therapy should also be temporarily withheld in any patient experiencing an acute or serious condition predisposing to the development of renal failure secondary to rhabdomyolysis, e.g., sepsis; hypotension; major surgery; trauma; severe metabolic, endocrine, or electrolyte disorders; or uncontrolled epilepsy.**

The risk of myopathy during treatment with lovastatin is increased if therapy with either cyclosporine, gemfibrozil, erythromycin, or niacin is administered concurrently. There is no experience with the use of pravastatin together with cyclosporine. Myopathy has not been observed in clinical trials involving small numbers of patients who were treated with pravastatin together with niacin. One trial of limited size involving combined therapy with pravastatin and gemfibrozil showed a trend toward more frequent CPK elevations and patient withdrawals due to musculoskeletal symptoms in the group receiving combined treatment as compared with the groups receiving placebo, gemfibrozil, or pravastatin monotherapy. Myopathy was not reported in this trial (see PRECAUTIONS: Drug Interactions). One patient developed myopathy when diltiazem was added to a previously well tolerated regimen of pravastatin; the myopathy resolved when diltiazem therapy was stopped and pravastatin treatment continued. **The use of fibrates alone may occasionally be associated with myopathy. The combined use of pravastatin and fibrates should generally be avoided.**

**PRECAUTIONS**

**General:** Pravastatin may elevate creatine phosphokinase and transaminase levels (see ADVERSE REACTIONS). This should be considered in the differential diagnosis of chest pain in a patient on therapy with pravastatin.

**Homozygous Familial Hypercholesterolemia.** Pravastatin has not been evaluated in patients with rare homozygous familial hypercholesterolemia. In this group of patients, it has been reported that HMG-CoA reductase inhibitors are less effective because the patients lack functional LDL receptors.

**Renal Insufficiency:** A single 20 mg oral dose of pravastatin was administered to 24 patients with varying degrees of renal impairment (as determined by creatinine clearance). No effect was observed on the pharmacokinetics of pravastatin or its 3 $\alpha$ -hydroxy isomeric metabolite (SQ 31,906). A small increase was seen in mean AUC values and half-life (t<sub>1/2</sub>) for the inactive enzymatic ring hydroxylation metabolite (SQ 31,945). Given this small sample size, the dosage administered, and the degree of individual variability, patients with renal impairment who are receiving pravastatin should be closely monitored.

**Information for Patients:** Patients should be advised to report promptly unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever.

**Drug Interactions:** **Immunosuppressive Drugs, Gemfibrozil, Niacin (Nicotinic Acid), Erythromycin:** See WARNINGS: Skeletal Muscle.

**Antipyrine:** Clearance by the cytochrome P450 system was unaltered by concomitant administration of pravastatin. Since pravastatin does not appear to induce hepatic drug-metabolizing enzymes, it is not expected that any significant interaction of pravastatin with other drugs (e.g., phenytoin, quinidine) metabolized by the cytochrome P450 system will occur.

**Cholestyramine/Colestipol:** Concomitant administration resulted in an approximately 40 to 50% decrease in the mean AUC of pravastatin. However, when pravastatin was administered 1 hour before or 4 hours after cholestyramine or 1 hour before colestipol and a standard meal, there was no clinically significant decrease in bioavailability or therapeutic effect. (See DOSAGE AND ADMINISTRATION: Concomitant Therapy.)

**Warfarin:** In a study involving 10 healthy male subjects given pravastatin and warfarin concomitantly for 6 days, bioavailability parameters at steady state for pravastatin (parent compound) were not altered. Pravastatin did not alter plasma warfarin-binding of warfarin. Concomitant dosing did increase the AUC of Cmax of warfarin but did not produce any changes in its anticoagulant effect (i.e., no increase was seen in mean prothrombin time after 6 days of concomitant therapy). However, bleeding and extreme prolongation of prothrombin time has been reported with another drug in this class. Patients receiving warfarin-type anticoagulants should have their prothrombin times closely monitored when pravastatin is initiated or the dosage of pravastatin is changed.

**Cimetidine:** The AUC<sub>0-12h</sub> for pravastatin when given with cimetidine was not significantly different from the AUC for pravastatin when given alone. A significant difference was observed between the AUC's for pravastatin when given with cimetidine compared to when administered with antacid.

**Digoxin:** In a crossover trial involving 18 healthy male subjects given pravastatin and digoxin concurrently for 9 days, the bioavailability parameters of digoxin were not affected. The AUC of pravastatin tended to increase, but the overall bioavailability of pravastatin plus its metabolites SQ 31,906 and SQ 31,945 was not altered.

**Gemfibrozil:** In a crossover study in 20 healthy male volunteers given concomitant single doses of pravastatin and gemfibrozil, there was a significant decrease in urinary excretion and protein binding of pravastatin. In addition, there was a significant increase in AUC, Cmax, and Tmax for the pravastatin metabolite SQ 31,906. Combination therapy with pravastatin and gemfibrozil is generally not recommended.

In interaction studies with aspirin, antacids (1 hour prior to PRAVACHOL), cimetidine, nicotinic acid, or probucol, no statistically significant differences in bioavailability were seen when PRAVACHOL (pravastatin sodium) was administered.

**Other Drugs:** During clinical trials, no noticeable drug interactions were reported when PRAVACHOL was added to: diuretics, antihypertensives, digitalis, converting-enzyme inhibitors, calcium channel blockers, beta-blockers, or nitroglycerin.

**Endocrine Function:** HMG-CoA reductase inhibitors interfere with cholesterol synthesis and lower circulating cholesterol levels and, as such, might theoretically blunt adrenal or gonadal steroid hormone production. Results of clinical trials with pravastatin in males and postmenopausal females were inconsistent with regard to possible effects of this drug on basal steroid hormone levels. In a study of 21 males, the mean testosterone response to human chorionic gonadotropin was significantly reduced (p<0.004) after 16 weeks of treatment with 40 mg of pravastatin. However, the percentage of patients showing a  $\geq$ 50% rise in plasma testosterone after human chorionic gonadotropin stimulation did not change significantly after therapy in these patients. The effects of HMG-CoA reductase inhibitors on spermatogenesis and fertility have not been studied in adequate numbers of patients. The effects, if any, of pravastatin on the pituitary-gonadal axis in pre-menopausal females are unknown. Patients treated with pravastatin who display clinical evidence of endocrine dysfunction should be evaluated appropriately. Caution should also be exercised if an HMG-CoA reductase inhibitor or other agent used to lower cholesterol levels is administered to patients also receiving other drugs (e.g., ketoconazole, spironolactone, cimetidine) that may diminish the levels or activity of steroid hormones.

**CNS Toxicity:** CNS vascular lesions, characterized by perivascular hemorrhage and edema and mononuclear cell infiltration of perivascular spaces, were seen in dogs treated with pravastatin at a dose of 25 mg/kg/day, a dose that produced a plasma drug level about 50 times higher than the mean drug level in humans taking 40 mg/day. Similar CNS vascular lesions have been observed with several other drugs in this class.

A chemically similar drug in this class produced optic nerve degeneration (Wallerian degeneration of reti-

nales) in cynomolgus monkeys in a clinically normal dogs in a dose-dependent fashion starting at 60 mg/kg/day, a dose that produced mean plasma drug levels about 30 times higher than the mean drug level in humans taking the highest recommended dose (as measured by total enzyme inhibitory activity). This same drug also produced vestibulocochlear Wallerian-like degeneration and retinal ganglion cell chromatolysis in dogs treated for 14 weeks at 180 mg/kg/day, a dose which resulted in a mean plasma drug level similar to that seen with the 60 mg/kg dose.

**Carcinogenesis, Mutagenesis, Impairment of Fertility:** In a 2-year study in rats fed pravastatin at doses of 10, 30, or 100 mg/kg body weight, there was an increased incidence of hepatocellular carcinomas in males at the highest dose (p<0.01). Although rats were given up to 125 times the human dose (HD) on a mg/kg body weight basis, their serum drug levels were only 6 to 10 times higher than those measured in humans given 40 mg pravastatin as measured by AUC.

The oral administration of 10, 30, or 100 mg/kg (producing plasma drug levels approximately 0.5 to 5.0 times human drug levels at 40 mg) of pravastatin to mice for 22 months resulted in a statistically significant increase in the incidence of malignant lymphomas in treated females when all treatment groups were pooled and compared to controls (p<0.05). The incidence was not dose-related and male mice were not affected.

A chemically similar drug in this class was administered to mice for 72 weeks at 25, 100, and 400 mg/kg body weight, which resulted in mean serum drug levels approximately 3, 15, and 33 times higher than the mean human serum drug concentration (as total inhibitory activity) after a 40 mg oral dose. Liver carcinomas were significantly increased in high-dose females and mid- and high-dose males, with a maximum incidence of 90 percent in males. The incidence of adenomas of the liver was significantly increased in mid- and high-dose females. Drug treatment also significantly increased the incidence of lung adenomas in mid- and high-dose males and females. Adenomas of the eye Harderian gland (a gland of the eye of rodents) were significantly higher in high-dose mice than in controls.

No evidence of mutagenicity was observed *in vitro*, with or without rat-liver metabolic activation, in the following studies: microbial mutagen tests, using mutant strains of *Salmonella typhimurium* or *Escherichia coli*; a forward mutation assay in L5178Y TK +/- mouse lymphoma cells; a chromosomal aberration test in hamster cells; and a gene conversion assay using *Saccharomyces cerevisiae*. In addition, there was no evidence of mutagenicity in either a dominant lethal test in mice or a micronucleus test in mice.

In a study in rats, with daily doses up to 500 mg/kg, pravastatin did not produce any adverse effects on fertility or general reproductive performance. However, in a study with another HMG-CoA reductase inhibitor, there was decreased fertility in male rats treated for 34 weeks at 25 mg/kg body weight, although this effect was not observed in a subsequent fertility study when this same dose was administered for 11 weeks (the entire cycle of spermatogenesis, including epididymal maturation). In rats treated with this same reductase inhibitor at 180 mg/kg/day, seminiferous tubule degeneration (necrosis and loss of spermatogenic epithelium) was observed. Although not seen with pravastatin, two similar drugs in this class caused drug-related testicular atrophy, decreased spermatogenesis, spermatocytic degeneration, and giant cell formation in dogs. The clinical significance of these findings is unclear.

**Pregnancy: Pregnancy Category X:** See CONTRAINDICATIONS.

Safety in pregnant women has not been established. Pravastatin was not teratogenic in rats at doses up to 1000 mg/kg daily or in rabbits at doses of up to 50 mg/kg daily. These doses resulted in 20x (rabbit) or 240x (rat) the human exposure based on surface area (mg/m<sup>2</sup>/day). However, in studies with another HMG-CoA reductase inhibitor, skeletal malformations were observed in rats and mice. PRAVACHOL (pravastatin sodium) should be administered to women of child-bearing potential only when such patients are highly unlikely to conceive and have been informed of the potential hazards. If the woman becomes pregnant while taking PRAVACHOL (pravastatin sodium), it should be discontinued and the patient advised again as to the potential hazards to the fetus.

**Nursing Mothers:** A small amount of pravastatin is excreted in human breast milk. Because of the potential for serious adverse reactions in nursing infants, women taking PRAVACHOL should not nurse (see CONTRAINDICATIONS).

**Pediatric Use:** Safety and effectiveness in individuals less than 18 years old have not been established. Hence, treatment in patients less than 18 years old is not recommended at this time. (See also PRECAUTIONS: General.)

**ADVERSE REACTIONS**

Pravastatin is generally well tolerated; adverse reactions have usually been mild and transient. In 4-month long placebo-controlled trials, 1.7% of pravastatin-treated patients and 1.2% of placebo-treated patients were discontinued from treatment because of adverse experiences attributed to study drug therapy; this difference was not statistically significant. In long-term studies, the most common reasons for discontinuation were asymptomatic serum transaminase increases and mild, non-specific gastrointestinal complaints. During clinical trials the overall incidence of adverse events in the elderly was not different from the incidence observed in younger patients.

**Adverse Clinical Events:** All adverse clinical events (regardless of attribution) reported in more than 2% of pravastatin-treated patients in the placebo-controlled trials are identified in the table below, also shown are the percentages of patients in whom these medical events were believed to be related or possibly related to the drug:

Body System/Event	All Events %		Events Attributed to Study Drug %	
	Pravastatin (N=900)	Placebo (N=411)	Pravastatin (N=900)	Placebo (N=411)
Cardiovascular				
Cardiac Chest Pain	4.0	3.4	0.1	0.0
Dermatologic				
Rash	4.0*	1.1	1.3	0.9
Gastrointestinal				
Nausea/Vomiting	7.3	7.1	2.9	3.4
Diarrhea	6.2	5.6	2.0	1.9
Abdominal Pain	5.4	6.9	2.0	3.9
Constipation	4.0	7.1	2.4	5.1
Flatulence	3.3	3.6	2.7	3.4
Heartburn	2.9	1.9	2.0	0.7
General				
Fatigue	3.8	3.4	1.9	1.0
Chest Pain	3.7	1.9	0.3	0.2
Influenza	2.4*	0.7	0.0	0.0
Musculoskeletal				
Localized Pain	10.0	9.0	1.4	1.5
Myalgia	2.7	1.0	0.6	0.0
Nervous System				
Headache	6.2	3.9	1.7*	0.2
Dizziness	3.3	3.2	1.0	0.5
Renal/Genitourinary				
Urinary Abnormality	2.4	2.9	0.7	1.2
Respiratory				
Common Cold	7.0	6.3	0.0	0.0
Rhinitis	4.0	4.1	0.1	0.0
Cough	2.6	1.7	0.1	0.0

\*Statistically significantly different from placebo.

The following effects have been reported with drugs in this class:

**Skeletal:** myopathy, rhabdomyolysis.

**Neurological:** dysfunction of certain cranial nerves (including alteration of taste, impairment of extra-ocular movement, facial paresis); tremor; vertigo; memory loss; paresthesia, peripheral neuropathy, peripheral nerve palsy.

**Hypersensitivity Reactions:** An apparent hypersensitivity syndrome has been reported rarely which has included one or more of the following features: anaphylaxis, angioedema, lupus erythematosus-like syndrome, polymyalgia rheumatica, vasculitis, purpura, thrombocytopenia, leukopenia, hemolytic anemia, positive ANA, ESR increase, arthritis, arthralgia, urticaria, asthenia, photosensitivity, fever, chills, flushing, malaise, dyspnea, toxic epidermal necrolysis, erythema multiforme, including Stevens-Johnson syndrome.

**Gastrointestinal:** pancreatitis, hepatitis, including chronic active hepatitis, cholestatic jaundice, fatty change in liver, and, rarely, cirrhosis, fulminant hepatic necrosis, and hepatoma; anorexia, vomiting.

**Reproductive:** gynecomastia, loss of libido, erectile dysfunction.

**Eye:** progression of cataracts (lens opacities), ophthalmoplegia.

**Laboratory Test Abnormalities:** Increases in serum transaminase (ALT, AST) values and CPK have been observed (see WARNINGS).

Transient, asymptomatic eosinophilia has been reported. Eosinophil counts usually returned to normal despite continued therapy. Anemia, thrombocytopenia, and leukopenia have been reported with other HMG-CoA reductase inhibitors.

**Concomitant Therapy:** Pravastatin has been administered concurrently with cholestyramine, colestipol, nicotinic acid, probucol and gemfibrozil. Preliminary data suggest that the addition of either probucol or gemfibrozil to therapy with lovastatin or pravastatin is not associated with greater reduction in LDL-cholesterol than that achieved with lovastatin or pravastatin alone. No adverse reactions unique to the combination or in addition to those previously reported for each drug alone have been reported. Myopathy and rhabdomyolysis (with or without acute renal failure) have been reported when another HMG-CoA reductase inhibitor was used in combination with immunosuppressive drugs, gemfibrozil, erythromycin, or lipid-lowering doses of nicotinic acid. Concomitant therapy with HMG-CoA reductase inhibitors and these agents is generally not recommended. (See WARNINGS: Skeletal Muscle and PRECAUTIONS: Drug Interactions.)

**OVERDOSAGE**

There have been no reports of overdoses with pravastatin.

Should an accidental overdose occur, treat symptomatically and institute supportive measures as required. (J4-422A)

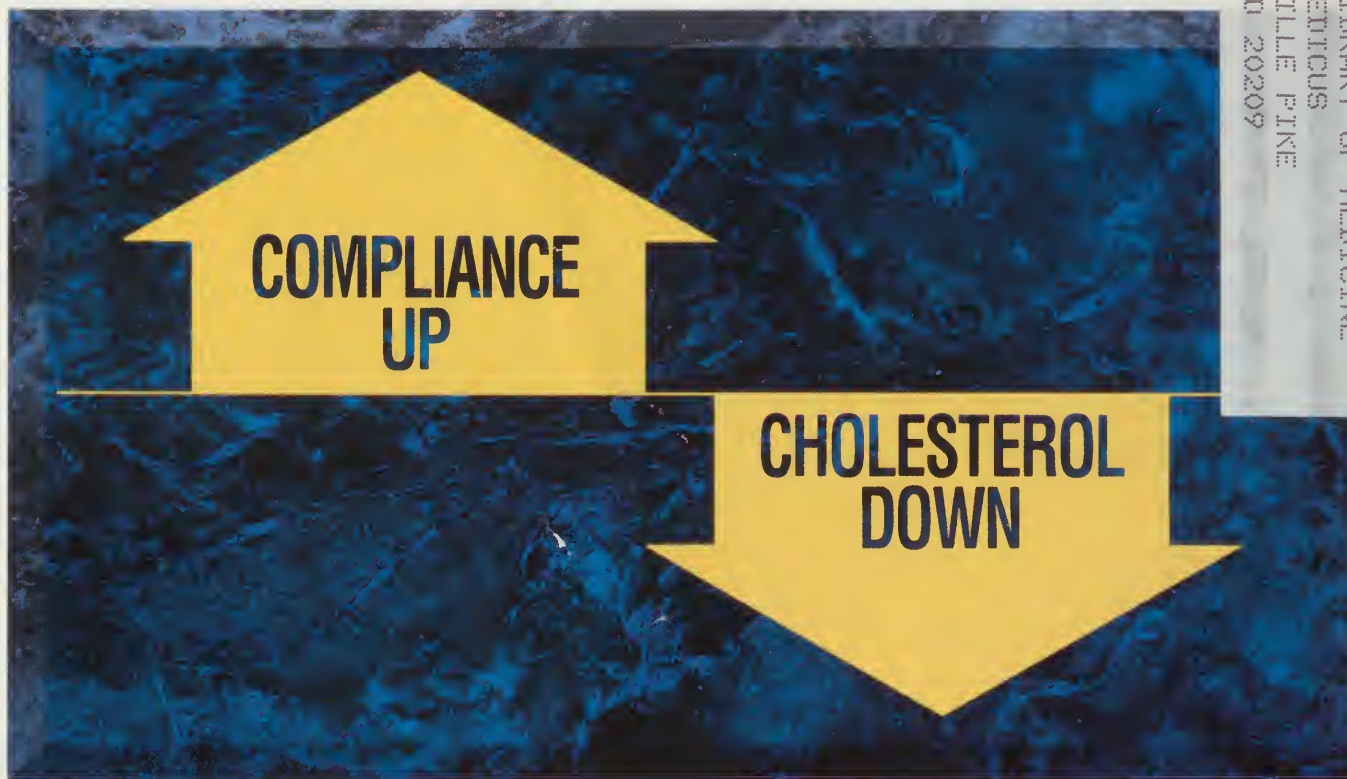


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JOURNAL OF THE KANSAS MEDICAL SOCIETY

June 1993

Volume 94, Number 6



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- Official Proceedings
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**ABOUT OUR LOGO**

In January 1935, a new logo appeared on the cover of KANSAS MEDICINE for the first time. This device represents two stethoscopes: the original monaural type as used by Lænnec, and the modern binaural variety. The logo was designed expressly for KANSAS MEDICINE by renowned graphic designer Bradbury Thompson, a native of Topeka and friend of two former editors of the journal, Dr. W.M. Mills and Dr. Lucien Pyle. As another former editor, Dr. Orville R. Clark, wrote in January 1955, the logo "has become as much a part of the journal as any of the features on the inside and is something which is ours alone."

**T**he scene on the cover, painted by Jim Hamil, is an event familiar to all Kansans, both native and adopted. The harvest of the wheat crop begins in Texas and gradually spreads northward into Kansas. As the summer progresses, custom cutters work their way up to the Dakotas.

Now the largest wheat producer in the United States, Kansas owes its success in this regard to Bernhard Warkentin. Catherine the Great encouraged German Mennonite farmers to escape persecution in their homeland and immigrate to Russia, where they would help the Russian people to improve their farming techniques. Later, under growing persecution from the Russians, many emigrated and relocated in the United States.

They brought with them a variety of wheat known as Turkey red, which was far better than the red fife, a spring wheat popular in Canada and being grown in Minnesota and the Dakotas.

Mr. Warkentin and his Turkey red wheat came from the Crimea, in southern Russia, to Halstead, Kansas, in 1873. Since then, practically all the wheat produced in Kansas has been descended from this grain. We owe a debt of gratitude to the Mennonites, who brought to their adopted state a gift that has established Kansas as the number-one wheat producer in America.

## ATTENTION, KMS MEMBERS!

If you have relocated, received a new telephone number, or changed your name or specialty in the past year, please be sure the KMS office has this information for the annual membership directory, which will be published in August.

Even if you have not experienced any of these changes, please take a moment to check your current directory listing for errors or missing information.

Students and residents: has your status changed since last summer?

To report information for your directory listing, please phone Ramona Perez, Membership Secretary, at 800-332-0156 or 913-235-2383 as soon as possible.

Thank you!

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# KANSAS MEDICINE

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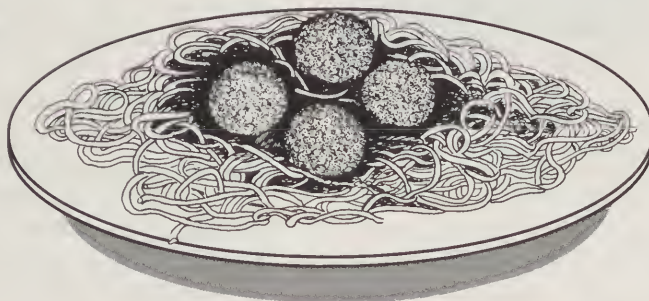
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# David E. Gray, M.D., 1916-1993

On April 25, 1993, KANSAS MEDICINE lost its editor of 23 years. David E. Gray, M.D., or D.E.G., as he was known to readers of this page, died in Topeka after a brief illness. A self-effacing person, he would not have approved of this use of his page, but just this once the staff will overrule his objection.



Dr. Gray was born in Hoisington, Kansas, on March 9, 1916. After a brief sojourn in El Dorado, the family settled permanently in Topeka, where his father, Arthur D. Gray, M.D., established a urology practice. The younger Dr. Gray was educated in Topeka public schools and earned his bachelor's degree in 1937 at Washburn College (now University). After college, he and his brother toured Europe. Then it was on to Northwestern University Medical School, with an internship at Passavant Hospital.

But during his high school and college years, Dr. Gray had been smitten with a lovely young woman named Jean Campbell. After deciding that his senior year of medical school would be much more tolerable if Miss Campbell became Mrs. Gray, he later incurred the wrath of Dr. Loyal Davis, head of neurology and neurosurgery at Passavant (and stepfather of Nancy Reagan), who refused his request for a leave when his first daughter was born, warning him that with a family to distract him he would surely fail. Dr. Gray graduated in 1942, having been elected to Alpha Omega Alpha, and one hopes Dr. Davis was not too disappointed to see how admirably he succeeded.

One family member who did distract Dr. Gray from his goals, though only temporarily, was Uncle Sam, who requested his assistance during World War II. A good and faithful nephew, Dr. Gray served valiantly as an infantry battalion surgeon in France, Holland and Germany, receiving the Bronze Star Award with two Oak Leaf Clusters.

After seeing Paree, Dr. Gray did his residency in obstetrics and gynecology at the University of Iowa and then returned to Topeka. In 1947 he began a partnership in obstetrics and gynecology with Dr. Lucien Pyle, and during the ensuing

years he served as president of the Shawnee County Medical Society and as staff president of Stormont-Vail and St. Francis hospitals. He was a fellow of the American College of Obstetricians and Gynecologists and was active in various Topeka civic organizations. In 1970 Dr. Gray was forced by a severe hearing loss to close his practice.

This, however, did not mean summers on the golf course and winters in Florida. Dr. Gray turned his attention to cytopathology and genetics at Damon Laboratories, from which he retired in 1984. Meanwhile, in 1970 he had also assumed the editorship of the *Journal of the Kansas Medical Society* (now KANSAS MEDICINE), and readers of the journal have enjoyed his insightful commentary and droll humor ever since. Dr. Gray's appreciation for history allowed him to view contemporary situations in light of the past, and his comparisons were often compelling. For example, in a special issue on AIDS in 1988, he likened the current epidemic to the plague which had swept Europe in the middle ages: "So we are having our own plague and, whatever our differences, we can know some of the feelings of our predecessors — social and medical. But they taught us this: humanity is tough and will survive — and one day we shall be a footnote in the history of plagues. Confidence is in order."

As a native Kansan, Dr. Gray appreciated the extremes of weather and seasonal changes that characterize this state. So when he discovered a book of Jim Hamil's watercolor renderings of Kansas scenes, it was love at first sight, and since January 1989 these evocative paintings have been featured on the covers of KANSAS MEDICINE, accompanied by delightful cover stories in which Dr. Gray delved into geographical and topographical oddities, the history of barns and bridges, agricultural facts, and many other topics.

As enjoyable as his columns were, Dr. Gray himself was even more so, and the KMS staff were delighted that he graced the office with his presence for two hours each business day. This writer shared an office with him for almost six years and can attest to his endearing personality and unfailing optimism. His poor hearing must have been a constant frustration to him, even after a cochlear implant in 1989 made it possible for



him to have a dialogue without writing everything down — provided there was no background noise. He still could not hear well enough to attend conferences, parties and other gatherings, but he never complained.

Dr. Gray relished the little things in life, such as his morning walk (in almost any kind of weather), an afternoon tending his roses or a visit from family members — especially if the family members were daughters Joan and Barbara or one of Dr. Gray's three grandchildren. Decaf coffee was served at home, so his first errand upon arriving at the office was to fill his mug with "the real thing." Sometimes there would be birthday cake or cinnamon rolls on hand, but if not he had a cache of Oreos or Dove chocolate bars in his desk in case his sweet tooth acted up.

A voracious reader, he subscribed to magazines as varied as *World Press Review* and *Yankee*. He loved mystery novels, particularly the Tony Hillerman books set on the Navajo reservation. These he would read with a large map of the Four Corners area close by so he could follow the characters as they traveled about the reservation. And he enjoyed sharing his books with friends.

Closed captioning made it possible for Dr. Gray to watch television, and he was always interested in seeing the industry's treatment of physicians. He was utterly disgusted — and astounded — at the popularity of *Doogie Howser, M.D.*, but became a devoted follower of *Northern Exposure*, even watching the reruns of that inventive series about a young New York physician practicing in rural Alaska.

In short, he enjoyed the pleasurable things in life and tried not to let the rest bother him. This may have been his most valuable and enduring commentary of all. s.w.

*At the KMS Annual Meeting last month, the House of Delegates passed Resolution 93-18, honoring Dr. Gray. This resolution appears on page 164.*



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Contact Andrew M. Barclay, M.D., Dept. of Family and Community Medicine, UKSM, 1010 N. Kansas, Wichita, KS 67214-3199; 316-261-2607. Applications due by August 1, 1993.

# Working Together to Effect Change

**I**n May 1992, Dr. Meidinger pledged to “build bridges” during his presidency. I commend him for the superb job he did in accomplishing that goal. Now it is time to continue the process, to reinforce those bridges and, yes, to use those supports to further our goal of caring for our patients.



*Bridges:* The KMS-KHA Liaison Committee, which Dr. Meidinger reorganized, must continue to function. I have asked him to continue to chair this vitally important committee which will provide the necessary link for us to pursue options on health care reform.

*Bridges:* The KMS-KUMC Liaison Committee is another essential link to help the medical school's primary care faculty become and remain financially viable. I have also asked Dr. Meidinger to continue to chair this committee, which should help to foster the primary care training that we all agree is vital. We must remember that KUMC is an invaluable resource for referral and specialty care for our patients. If we do not support it with referrals, it could perish.

*Bridges:* We hope to continue and expand the links that have been made with business through Dr. Meidinger's Chamber of Commerce visits.

*Bridges:* The KMS/KMS Alliance bridge has been strengthened and reinforced during the last year by our dynamic past presidents. Dr. Meidinger and Terrie Browning remain an inspiration for all of us. Already Cathy Wilcox, our new KMS Alliance President, and I are working on a “bridge” between Hays and Shawnee Mission to allow us to visit your council districts together.

In May 1953 two men were the first in history to climb Mt. Everest: Sir Edmund Hillary, a New Zealand beekeeper/explorer; and Tenzing Norgay, a Nepalese Sherpa guide. Together they reached the summit and attained instant international fame.

On the way down from the 29,000-foot peak, Hillary slipped and started to fall. He would almost certainly have fallen to his death, but Tenzing Norgay immediately dug in his ice axe and braced the rope linking them together, thus saving Hillary's life.

At the bottom, the international press made a huge fuss over the Sherpa guide's heroic action.

But through it all, Tenzing Norgay remained very calm, professional and unaffected by it all. To the shouted questions, he had one simple answer: “Mountain climbers always stick together.”

Now, 40 years later, is the time we in medicine must also stick together in the tradition of mountain climbers. We must meet the coming mountain of health care reform with our resolve to pull together — in the interest of our patients. We must all do our utmost to recruit colleagues into our organized efforts to influence the coming changes in a positive way. We must discard our own special interests of specialty division, diverse locations and practice differences.

It is clear reform is coming, and change is inevitable. Fortunately, others are increasingly realizing that only we, who care for patients, have the know-how to effect appropriate change in the system. Preservation of choice seems to be increasingly looked upon with favor. Also, any change will probably be market-based, even if managed competition. Still, cost controls may well be included in the Clinton plan, even though total physician income is only \$80 billion of the approximately \$900 billion in health care expenses.

The enormity of the U.S. health care system — currently \$900 billion, one seventh of the GDP, and the creator of two thirds of all new jobs in the last three years — may slow this inevitable change, but it *will* come.

The coming mandates will include universal coverage, a comprehensive benefits package for all, and innovative state initiatives.

In March 1973, 20 years after Hillary and Norgay conquered Everest, a “mountain climber” named Jerry Slaughter joined KMS. Through his years of superb leadership, he has assembled a team of staff members unsurpassed anywhere. With his expertise and involvement guiding us all, we cannot fail. The job, for all of us, is immeasurably easier and more pleasurable.

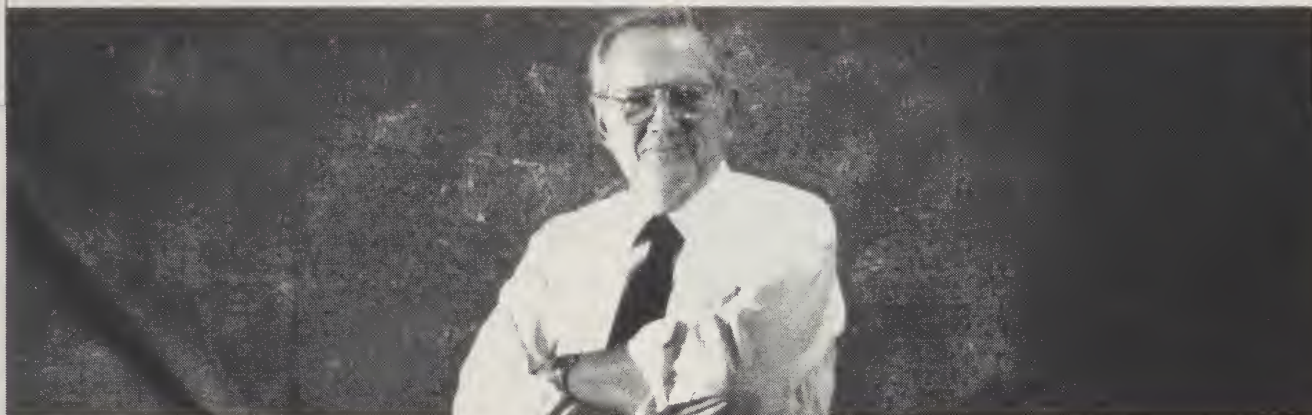
I challenge us all to respond to the opportunities before us, and to move forward positively to meet them. Let us advance together, like mountain climbers, to scale the peaks ahead of us.

Together we can!

Arthur D. Snow, Jr., M.D.



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# Collateral Source Cases

WAYNE T. STRATTON, J.D.,\* *Topeka*

In a recent unanimous decision, the Kansas Supreme Court declared K.S.A. 60-3802 unconstitutional.

This law modified the common law "collateral source doctrine." Simply put, this court-made rule of evidence permits a plaintiff to claim damages for expenses incurred for treatment of injuries, even though the expenses may have been paid by a third party. Given the availability of health insurance and other benefits, it is not uncommon for a plaintiff to receive payments for expenses incurred one or more times — and then recover again in a tort case against a negligent party.

The rationale for this rule is that someone who prudently provides for their financial security in the event of an accident should not be penalized. Proponents of modification of the rule emphasize that modern-day society provides, through many mechanisms, for the protection of persons, and it is fundamentally unfair to allow double or triple recoveries.

With every motorist, every health care provider, every common carrier and many other potential tortfeasors statutorily obligated to carry insurance, the collateral source rule is no longer necessary and contributes to the increased cost of insurance. Commentators have indicated that legislative abrogation of the collateral source rule will result in a savings of 10 to 20 percent on malpractice premiums. Similar savings could be expected in other liability insurance areas.

This is the third time that efforts to modify the doctrine have passed the legislature, only to be



## When can a plaintiff be paid twice for the same expense?

held unconstitutional by the Kansas Supreme Court. The first law, passed in 1976, was restricted to suits against health care providers. The court found a violation of equal protection because persons who received insurance benefits were treated differently from those without insurance or those who receive gratuitous care.

In 1986, the legislature passed a law which corrected the deficiency in the first act. In a remarkable decision, the Kansas Supreme Court split 2 to 2 to 3. Two members held it unconstitutional, applying a test normally not applied to cases of this type; two held it unconstitutional, applying the traditional and appropriate rational basis test; and three dissented, contending that it was constitutional.

The third attempt, in 1988, applied to all tortfeasors. Unfortunately, the legislature included a threshold of \$150,000 in claimed damages before the act would apply, a feature now latched onto by the court as a violation of equal protection.

Prior case law has held that the legislature is not precluded from treating parties differently if they have different claims. The legislature normally is allowed to classify parties in order to accomplish this purpose. The classification will be upheld if it is related to a legitimate state purpose. The classification must be reasonable and nonarbitrary, and must treat persons in similar circumstances equally. Unfortunately, the Kansas court found that there was no legislative history to support the distinction between those seeking damages of less than \$150,000 and those seeking more damages.

As it now stands, the jury will not hear evidence that bills were actually paid from another source.

Whether the legislature will pass additional legislation and whether the same will withstand the inevitable constitutional attack will be determined within the next few years.

\*KMS Legal Counsel.

Comments appearing herein are not intended as a substitute for legal analysis or advice. Answers to legal questions depend largely upon the particular facts of a case. The reader is urged to consult an attorney for answers to specific legal questions.

These comments do not necessarily represent the views of KANSAS MEDICINE, or the Kansas Medical Society. For further information, contact Mr. Stratton, 515 S. Kansas, Topeka, KS 66603, 1-800-332-0248.

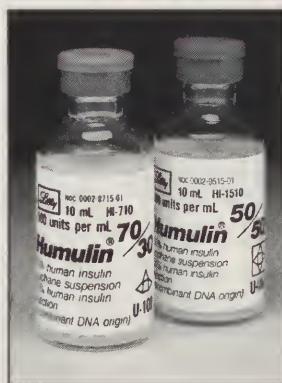





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# Installation Address: Facing Change with Hope

**C**onsider this quote from a former United States President: "Change is the law of life. And those who look only to the past and present are certain to miss the future." Those words of wisdom express my feelings about this special year in our organization: a time of reflection, and a time of change.



Change is one thing that is inevitable. It goes on in ourselves, our families, the medical society, and the auxiliary. I have chosen "Facing Change with Hope" as the theme for this year. We are all anticipating change in our health care system. We can't always control changes, but we can control our *reaction* to change.

Our organization represents 68 years of continuity and change. Today I address you as a celebration of our past and a hope for the future. From our 1925 beginning, we have evolved into a 1,000-member-strong group of willing volunteers, dedicated to making a difference.

Today [May 1] we made a historic change when we voted to become the Kansas Medical Society Alliance, a new name to accompany you through the changes you face. Yet our central theme will remain the same: to support medicine and to promote the health and quality of life in our communities and across the state.

Hope has been a central concept in my life. As a student at the University of Kansas, I enrolled in a psychology course entitled "Hope." I wish I could get my hands on that textbook today! I had never spent much time thinking about hope prior to that semester, but by the end of it the concept meant a great deal to me. If you listen carefully to everyday conversation, you will be surprised how many times you hear other people—or yourself—use the word.

Where there's life there's hope, the old saying goes. True enough. But the reverse is truer still: Where there's hope there's life. The wonderful thing about this life-support system is that it's always available. It's with us all the time, and we use it constantly—even when we're not aware we're using it.

Consider: In every week there are 168 hours.

If you spend fifty of those hours sleeping, what are you doing with the rest? You are hoping. Large hopes. Small hopes. All manner of hope.

I will strive to infuse hope throughout this year. For if we hope all things, we can do all things for the good, for the health of the citizens of Kansas. Hope is a state of mind. Hope is contagious. If you let yourself come in contact with it, you're likely to catch it.

Hope is intimately tied to beginnings; of this I am certain. We launch new projects with hope of a successful conclusion. I challenge this group to forge new hopes for the health of our state. The auxiliary/alliance will address many health projects:

*Healthy lifestyle.* With major changes coming in our health care system, a healthy lifestyle is more critical than ever. We need to influence our members and patients to practice wellness and lifestyle changes. Information on this subject will be a focus for the year ahead in the alliance.

*Breast cancer.* One out of eight women will die of breast cancer this year. What can we do? Be aware of this alarming statistic! Promote education. Promote and/or teach breast self-examination and encourage routine mammograms.

*Domestic violence.* We will continue the national AMA/AMAA campaign to fight this epidemic. This year we will, in coalition with the Kansas Children's Service League, sponsor the Governor's Conference on Child Abuse Prevention, to be held in Topeka on October 20-22.

*Care for children.* We will continue working for access to care for children by supporting the Caring Program for Children in Kansas, now available all across our state.

*Marrow donors.* We will continue to raise the number of Kansans registered to be potential bone marrow donors listed in the National Marrow Donor Program.

*Legislation.* We stand ready to stand with you on legislative issues. We will promote positive health care legislation. We will respond as the

(Continued on page 177.)





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# Council District Reports

## **COUNCIL DISTRICT 1**

In this report, I will highlight the main events of the past year in District 1 (Northeast Kansas). The most encouraging development is the reorganization of the Leavenworth County Medical Society, under the direction of Alternate Councilor Dr. Vernon Mills. The Leavenworth County society has had several meetings and is conducting a membership drive.

The annual Councilors' Banquet was held at the Drury-Pennell House on October 6, 1992. This was very well attended, with an interesting talk given by KMS President Dr. Dick Meidinger. Many items were discussed, including access to care and primary care initiatives. KMS Auxiliary President Terrie Browning also gave an excellent presentation.

Atchison County Medical Society drafted several resolutions for the KMS annual meeting. These pertain to medical-legal liability concerns and related matters. This and the other societies in the district are being encouraged to send delegates to represent their respective societies' interests on these issues.

My main function has been to act as a conduit carrying information from the state level back to Northeast Kansas, Atchison and Leavenworth medical societies. On two occasions, I have sent legislative updates via Chip Wheelen, KMS Director of Public Affairs.

John R. Eplee, M.D., *Councilor*

## **COUNCIL DISTRICT 2**

The Wyandotte County Medical Society, District 2, has continued its interest in community health care this past year with ongoing consideration of establishing a community health center. The latest endeavor has been to support our county health department's letter of intent to apply for a federal grant for this purpose, with the proviso that the medical society be involved in the detailed planning for such a center.

We also supported KU Medical Center's efforts to obtain a Robert Wood Johnson Foundation planning grant to support initiatives to increase the number of medical school graduates entering

generalist physician careers. Unfortunately, KUMC did not receive this grant.

We are presently considering a proposal to support the establishment of a medical examiner system for Kansas. We have discussed with our corner the proposal of the Kansas Society of Pathologists and are pursuing this subject with the hope that a concrete policy statement will emerge in the near future.

We were also pleased to learn that one of our members, Dannie M. Thompson, M.D., was chosen to serve on the American College of OB/GYN's Liaison Task Force to the Clinton Administration on Health Care Reform. We feel Dr. Thompson was an excellent choice for this task force, as he has successfully combined an active private practice of OB/GYN and active public health service for 25 years in our community.

Barbara P. Lukert, M.D., *Councilor*

## **COUNCIL DISTRICT 3**

District 3 has had another busy year. The Johnson County Health Partnership clinic opened January 15, 1992. Donald J. Smith, M.D., is the medical director. The clinic is open Monday through Friday from 8 to 5. Every day at least one two-hour clinic is offered. The patients are seen by appointment only and are first screened by telephone for eligibility. To date, more than 1,200 patients have been seen by over 80 volunteer physicians.

Our ninth annual Legislative Dinner was held September 22, 1992. The speaker was Edward Rosenbaum, M.D., author of the movie and book *The Doctor*. Two hundred seventeen people attended, including 37 candidates and judges.

Maggie Smith, M.D., chaired the second Physician Preceptorship Program (renamed from Mini-Internship) last fall, and Robert Coleman, M.D., chaired the third, held in February. Fourteen participants from the business and civic communities have been involved in a two-day program. These participants spent a half-day with a physician from each of four areas: primary care, emergency, surgery and specialist.

KMS President Richard Meidinger, M.D., and



KMSA President Terrie Browning addressed the society in January. An attorney from the Kansas State Board of Healing Arts met with us to discuss the topic of prescribing procedures.

In a joint venture with the Metropolitan Medical Society, Johnson County Medical Society co-sponsored "Doctors on Call" with KCTV-5 on March 30 and 31. Physicians of Greater Kansas City (Jackson County Osteopathic, Metropolitan Medical and Johnson County) gave cash awards and certificates to the first- and second-place winners of the Greater Kansas City Science Fair in senior, intermediate and junior divisions.

Lester Richardson, D.O., has been named Medical Director of Med-Act for Johnson County.

Lawrence Riffel, M.D., our President, has been very involved in leading the society and guiding the future of medicine in Johnson County.

Douglas M. Whitley, M.D., *Councilor*

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### **COUNCIL DISTRICT 6**

During the past year, the spirit at Shawnee County Medical Society has been one of "Let's try something different." We began our year with a first: I was elected to a second term as President of SCMS, my first having been in 1983. I also wore two hats by continuing my term as Councilor for District 6. Our annual meeting was held at Historic Ward-Meade Park in Topeka, where we kicked off our project to create, in conjunction with the City of Topeka, the Shawnee County Dental Association and the Pharmacy Association, a turn-of-the-century drug store with working soda fountain and pharmacy, as well as physician's and dentist's office exhibits. We agreed to raise \$80,000 from our membership as our contribution to the project and are at the 50% mark at this writing. The project will not only preserve the history of medicine in Shawnee County, but will also act as a great tourist attraction for our community.

Because of the special activities at the annual meeting, we did not host the KMS President until our November meeting. A significant number of members turned out to visit with Dr. Meidinger and Terrie Browning.

Two years ago, SCMS embarked on a concerted effort to establish an identity for itself as a leader in the community in issues concerning health and to dedicate our efforts to public educa-

tion and service. Our activities throughout the year have been numerous and highly successful.

In August, the "Race Against Breast Cancer," a program of low- or no-cost mammography screening for women, was begun. This program was developed in cooperation with the two local hospitals, Radiology and Nuclear Medicine, Shawnee County Health Agency, Marian Clinic, SCMS Auxiliary and the Junior League of Topeka. All providers have agreed to donate their services, and extra funding for the program is generated by a 5K walk/run. The first of these was held in October, with over 500 attendees, and raised \$5,000.

In addition to this program, SCMS was again involved in planning activities for Breast Cancer Awareness Month in October. This year we co-sponsored the "Women's Power Breakfast to Fight Breast Cancer," in addition to other educational and support activities. The breakfast was attended by over 250 women.

During the past year we focused quite a bit of energy on AIDS education. In September we presented, in conjunction with the Kansas Trial Lawyers Association, a public symposium on AIDS. SCMS was also a leader in the Topeka display of the NAMES Project AIDS Memorial Quilt last February. Our Executive Director, Byron Cook, was Co-Chair of the display committee that organized the event, focusing on AIDS education and awareness. SCMS was one of the original sponsoring organizations, in addition to both Topeka hospitals and the United Way. The display was highly successful. The quilt was seen by over 15,000 people, and the display committee's efforts raised more than \$26,000 for local AIDS service agencies.

We have established a policy of working with other community agencies to provide different health promotional activities on a monthly basis. Last June we participated with the hospitals in free skin screenings for Skin Cancer Awareness Month. In July we cosponsored, with Washburn University, the National Youth Sports Program, providing summer activities for over 300 underprivileged youths. We gave free physicals in conjunction with the Community Action Center's Back to School Fair in August. In November and December, we worked with Heart to Heart of Olathe to collect over one and a half pallets of pharmaceutical samples for shipment to St. Petersburg, Russia. For Heart Month, in February, we joined the Heart Association in sponsoring free blood pressure and cholesterol checks. In

March, we participated in mental retardation awareness activities, in conjunction with the Topeka Association for Retarded Citizens, focusing on fetal alcohol syndrome and training facilities for retarded adults. In April, we worked with a community coalition on immunization activities. Upcoming events include an asthma workshop cosponsored by the Lung Association in May and a Sickie Cell Fun Fair in June, in conjunction with the Sickie Cell Foundation and the Kansas City Royals.

We also continued and expanded on programs begun last year. Our Mini-Internship program has proven a highly successful tool which allows community leaders a two-day, behind-the-scenes look at the practice of medicine. We offer this program twice a year, spring and fall. We continue to publish a weekly column in the Topeka *Capital-Journal*, "Doctor's Advice," which responds to readers' medical questions. We also host bi-monthly medical-business roundtable breakfasts, focusing on health-related issues of importance to both the medical and business communities.

In 1992-93 we also expanded our political activities. Our newly created legislative committee spent most of the year finding its focus, but is now mobilized for activity throughout the year. The most successful result of their efforts was the work they did to secure the services of a board-certified forensic pathologist for Shawnee County Coroner. We also hosted all local and state political candidates at a dinner in August and invited them to a political forum in October. Additionally, Rep. Jim Slattery spoke to SCMS in November and Sen. Nancy Kassebaum in February, on their own feelings about national health insurance and their proposals on these issues.

In addition to public activities, we have continued to reorganize and revitalize the internal workings of SCMS. Our by-laws were totally rewritten. Most significant changes in this effort were the creation of special-interest sections for women physicians, retired physicians and residents, and an increase in our board size from 10 to 13 to accommodate representatives from each of these sections.

The Women's Section has been very active. The committee was formed specifically for activities surrounding Women in Medicine Month last September, but has remained active throughout the year. In September, they hosted a women's membership recruitment event. Additionally, Carol Nadelson, M.D., former president of the American Psychiatric Association, spoke at a com-

munity symposium on the changing role of women in medicine.

The seniors' section, the "Hippocratic Circle," surveyed the retired members of SCMS and has developed programs in response to that survey. Seniors will be involved with lobbying, member recruitment, committee work, community service, etc. The committee is forming a support group for physicians and their spouses, and plans to have some fun, too.

Our new newsletter, the *Informer*, was first published in November and was designed to increase communication with the membership and reduce the number of mailings sent to them. The *Informer* is produced in-house, and in April we began soliciting advertising. It is now self-supporting.

Thanks to our ever-growing medical community and KaMMCO, our membership continues to grow; we have 403 members. We mourn the loss this past year of three long-time members, Dwight Lawson, Harold Powers and Les Saylor.

In the coming year we will focus a great deal of attention on the issues of violence and abuse. We hope to join forces with other community agencies to spearhead a community anti-violence initiative. We have begun to educate our own members, collaborating with Menninger on an educational seminar entitled "Confronting the Effects of Violence in the Healthcare Setting."

All of this has made for an exciting time for SCMS, and we enter the next year with high hopes and great expectations.

Robert D. Durst, M.D., *Councilor*

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#### **COUNCIL DISTRICT 8**

This past year's activities were highlighted by the visit in October 1992 of KMS President Richard Meidinger, M.D. Dr. Meidinger explained his objectives and agenda items for the year, and also several aspects of the legislative program for the 1993 session. A special feature of the meeting was a visit from KMSA President Terrie Browning, who performed a skit portraying an elderly woman, complete with appropriate dress. It was great.

There has been little dialogue with the Butler-Greenwood Society, but they were invited to attend the Annual Meeting of District 8. Dr. Ben White, of El Dorado, was present.

The Cowley County Medical Society holds monthly meetings and has scientific programs



sponsored by the Wichita branch of the medical school, or by pharmaceutical companies.

We still do not have our membership up to the pre-unification level, though the rescinding of the unified membership policy has been of some help. We are striving to enroll every physician in Cowley County. We still do have several members who also belong to the AMA. However, there is continued attrition in the number of physicians in the district. Arkansas City lost two internists last spring, increasing the patient load of the remaining area physicians. So far, we have recruited one new internist.

Newton C. Smith, M.D., *Councilor*

### COUNCIL DISTRICT 11

The Medical Society of Sedgwick County, District 11, has been involved with a variety of projects this year. Following is a summary.

*Physician Information Program Initiated.* Through the cooperative efforts of the area hospitals and the society, the Kansas Physician Information Verification Program (KPIVP) was established to centralize the verification process for

physician applications for appointment and reappointment to medical staffs. Currently, six health care organizations participate: HCA Wesley, Riverside, St. Francis, St. Joseph, HCA Wesley Rehabilitation Hospital and the Galichia Medical Group.

The community-wide process began in August 1992, and as of January 1, 1993 fifty applications were in various stages of processing. The program is administered by the society's board of directors, based on recommendations of an advisory council composed of two representatives from each of the participating entities. Sharon Hartley, CMSC, serves as program director. Plans call for initiating the reappointment process of the program in approximately six to eight months. The reappointment process, like the application process, will be uniform throughout all participating facilities. Once the effectiveness of this program has been proven, the verification services will be made available to all other hospitals and health care entities in Kansas.

*Emergency Student Loan Fund.* Through the cooperative efforts of the society, its auxiliary and UKSM-W, a loan fund was established to assist medical students at the Wichita campus. Since the



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program began last June, the fund has assisted 28 students. The program's initial funding was through proceeds from the Doctor After Hours benefit event, which featured a silent auction and entertainment provided by members of the society, auxiliary and medical school. This event raised \$12,000, and a second benefit program, held in February 1993, raised \$13,000. Funds from the second event were divided equally among the loan fund, the Medical Service Bureau and the Bone Marrow Testing for Minorities Program. Administration of the loan program is through the society, based on eligibility and repayment guidelines established cooperatively by the society and the medical school. The maximum loan amount is \$500, to be repaid within 90 days, with no interest.

*Pharmacy Hotline Program.* Through a joint effort with the Wichita Academy of Pharmacists and the society, this informational exchange was organized. The purpose of the program is to provide physicians and pharmacists with a communication network to aid in recognizing forgeries or attempts to obtain drugs fraudulently.

*Community Health Education Program.* The society's Foundation for Medical Care, Inc. granted \$7,500 to the Wichita Public Library to fund the establishment of a new computer educa-

tional system called Health Reference Center. The computer will allow area citizens to search 170 journals on health, fitness, nutrition and medicine. Included in the package is full text coverage of 100 consumer-oriented magazines, newsletters and professional journals with abstracts and technical articles written in lay language. Printouts of retrieved information may be obtained.

*Physicians' Educational Programs.* During the year, several outstanding speakers were secured to discuss topics ranging from "Dominique Jean Larrey: Surgeon to Napoleon's Guard" to OSHA and health care reform.

Other society activities included the following topics: legislative, EMS, local health planning, patient referral, new Sedgwick County coroner program, revision of medical-legal code in cooperation with the Wichita Bar Association, Medical Review Foundation, WPPA, and community-wide physician paging system.

The society bylaws were amended such that, beginning in 1993, membership meetings will be scheduled on a quarterly, rather than monthly, basis. At the end of 1992, the society's membership was 939, of whom 739 are actively practicing.

Tom Kendall, M.D., *Councilor*

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## COUNCIL DISTRICT 13

### COUNCIL DISTRICT 12

Barber and Pratt counties have been awarded one of seven Integrated Community Health Development grants from the Kansas Health Foundation. Although the grant application was initiated by the area hospitals, the purpose of the grant is to provide technical assistance to study the entire health care system in these two counties.

Two councils have been formed to meet with a facilitator, on a regular basis, from April through November 1993. The grant monies provide the funds to hire the facilitator. The council includes representatives from agriculture, the Extension Service, clergy, government, the school system, chamber of commerce and the area's largest employers. Representatives on the Health Provider Council include physicians, EMS director, hospital administrators, hospital board members, directors of public health, mental health, home health and school health, and the nursing home administrator.

To study the region's health care system adequately, a multi-step process will be used with active involvement of the region's health care providers, community leaders and citizens. Step one is an analysis of the existing regional health services to determine their availability, capacity to meet present demand, organizational structure, under-utilization (if any) and viability. A community health needs survey will be used to make recommendations on ways identified needs can be addressed.

Step two will be to identify the appropriate range of services for the two counties. Recommendations will then be made for the most appropriate organization to deliver each service, and the Community Health Council will evaluate the feedback of providers, community leaders and citizens regarding these recommendations. Any necessary fine-tuning will be done and an implementation plan will be developed.

This project is a significant opportunity to shape the future health care system in Barber and Pratt counties. By working together, community members and health care providers have the opportunity to develop a shared vision, to develop and implement a health care delivery structure and to accept responsibility for the provision of their health care.

William Costello, M.D., *Councilor*

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At the annual meeting of the Central Kansas Medical Society in the fall of 1992, we elected Dr. Tom McDonald as President, Dr. Greg Woods as Vice President and Dr. Ross Stadalman as Treasurer. KMS President Dr. Richard Meidinger presented an update on state society activities at this meeting.

The 403 Commission visited Hays for a town hall meeting. Interested members of the Central Kansas Medical Society attended and gave excellent input to the commission.

This year saw the loss of two longtime pediatricians. One left for a more populous area, and the other made an academic career move. Currently, pediatric coverage is being provided through locum tenens.

Ward M. Newcomb, M.D., *Councilor*

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## COUNCIL DISTRICT 14

The combined Barton-Pawnee County Medical Societies continue to enjoy a spirit of cooperation in both our medical society functions and day-to-day medical practices. This unification, approved by KMS two years ago, has proven beneficial to members of both societies.

We all enjoyed Dr. Richard Meidinger's presidential visit last June, when he was accompanied by representatives of the KMS staff. In addition to visiting with the member physicians, Dr. Meidinger conferred with various community and business leaders, seeking input from them as to their health care concerns.

We wish to salute and give our special thanks to Dr. Perry Schuetz, who has presided over our combined medical society for the past two years.

Richard C. Preston, M.D., *Councilor*

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## COUNCIL DISTRICT 15

This district includes the Seward, Iroquois and Ford County medical societies. From the viewpoint of this councilor, medical practice within the district may be separated into two strata. The first is made up of the two largest towns, Liberal in Seward County, and Dodge City in Ford County, which provide multiple medical specialists and maintain moderate-sized hospitals of approximately 80 to 100 beds. These centers seem

less threatened by trends in reimbursement and the whims of government regulators and lawyers. In contrast to the larger towns within the district, the smaller communities (usually with a population below 2,000) that comprise the other stratum are served by one or two family practitioners and hospitals with fewer than 30 beds. Meade currently has two physicians; Minneola has two; Bucklin has one family practitioner; Coldwater has one; and Greensburg is served by two, as is Kinsley. In January Ashland lost its only physician, who moved out of state. The Ashland District Hospital board is struggling to locate a replacement physician and still desires to maintain a hospital within the community.

While health care decisions of a lifetime are being made in Washington, D.C., none of the physicians queried in southwest Kansas believe that the federal government is capable of improving the quality of health care. With government pork barrel spenders closing in on control of the \$800 billion health care budget, physicians here seem quite ill at ease. The biggest fear within the southwest medical community is that the inevitable change in the health care system will produce a price control utility system with caps on spending and no caps on health care needs.

The dreams, ambitions and incentives of physicians in southwest Kansas diminish as the prospect of working for the federal bureaucracy approaches.

S. T. Feldmeyer, M.D., *Councilor*

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#### **COUNCIL DISTRICT 16**

District 16, Northwest Kansas, has been quiet — approaching stagnation. Meetings and membership drives have been impeded by other scheduled events and by unscheduled weather.

We have 18 members. Of these, nine are retired and all belong to the AMA. The other nine are all active, but only five are in the AMA. It seems that as our “traditional” physicians retire or leave for more relaxing or lucrative employ, they are replaced in large part by physicians less enthusiastic about the role of organized medicine in their lives and practices. Frankly, the battering that rural medicine has received from government is unprecedented in history and is unmitigated by any medical organization. We are unlikely to have a stronger voice through the Clinton years.

Our membership has considered disbanding,

but distance would absolutely preclude any attendance at other “local” society meetings. Those of us with interest in KMS greatly fear losing all voice and representation for this corner of Kansas.

We cling to the hope that the forces assaulting quality medical care for Kansas will not render these discussions moot.

John Rand Neuenschwander, M.D., *Councilor*

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#### **COUNCIL DISTRICT 17**

On May 5, 1992, District 17 met and elected officers for the year, all of whom had previously held the same posts. They are: Dr. Eva Vachal, president; Dr. Tom Mathews, vice president; and Dr. James Zauche, secretary-treasurer. The 1992 KMS House of Delegates, which had just concluded, was summarized, and a representative of a malpractice insurer gave a talk on malpractice effects on practitioner and family.

At the September 29 meeting, KMS President Richard Meidinger, M.D., spoke on “the state of the KMS,” and Terrie Browning, president of the KMSA, gave a presentation. KMS Executive Director Jerry Slaughter also attended this meeting. The councilor’s report was directed at KMS’ membership recruitment drive. Questionnaires requesting suggestions from membership for future meeting programs were distributed.

At the November meeting, the membership was informed of the upcoming 403 Commission town hall meeting in Garden City. The subsequent meeting was well represented by members of the local medical society.

The meeting of April 8, 1993, consisted of a report and presentation from Rep. Pat Roberts on the state of rural health and rural issues in general. Rep. Roberts forcefully stated that the local medical society members must be very active in writing Congress to insure that the upcoming health care reform act retains features that preserve the strengths of the present system.

The last meeting before summer has been scheduled for May 4, capping a busy year at the local level.

Bruce D. Melin, M.D., *Councilor*

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#### **COUNCIL DISTRICT 18**

The concerns of District 18 continue to be access to care and lack of primary care physicians. Dr.



Leitch and Dr. Gollier have pursued a mandate from the KMS House of Delegates (Resolution 92-6) and have corresponded with many politicians, including the Governor, and with administrators at the KU Medical School, regarding the access to care and lack of primary care physicians in underserved areas. The response has been positive, and we feel there is a general awareness of the need to address these issues, on both state and national levels.

On February 16, KMS President Dr. Richard Meidinger and KMS Auxiliary President Mrs. Terrie Browning were guests at the Douglas County Medical Society's meeting in Lawrence. A very moving portrayal of the issue of elder abuse was given by Mrs. Browning, and Dr. Meidinger outlined the current executive concerns of the KMS.

Rep. Jim Slattery was in Ottawa in February and presented a very informative program on health care reform. Sen. Bob Dole visited Ottawa in October and seemed to be aware of the problems of rural and underserved areas as well.

We continue our contact with Sen. Doug Walker, Rep. Walker Hendrix, and Rep. George Teagarden seeking their assistance regarding legislative issues vital to KMS.

Robert A. Gollier, II, M.D., *Councilor*

#### COUNCIL DISTRICT 19

I have attended all the council meetings this year and have transmitted news of KMS to the membership of the Southeast Kansas Medical Society. I made one visit to Chanute and discussed the possibility of their forming their own medical society, incorporating some of the counties adjacent to Neosho County.

In February I attended a meeting in Topeka at which Sen. Nancy Kassebaum explained the health plan that she has developed. Attendance at the county medical society meetings has been average. Incorporating the area health education programs with the county medical society meetings has been very valuable in maintaining our membership.

James W. Wilson, M.D., *Councilor*

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# Official Proceedings of the 1993 House of Delegates

**F**ollowing a tradition established just last year, the Kansas Medical Society and the KMS Auxiliary (whose name changed during this year's meeting to the Kansas Medical Society Alliance) participated in a joint Opening Ceremony to mark the start of their annual meetings. The ceremony began at 8:00 a.m. on Saturday, May 1, 1993, at the Holiday Inn West, Topeka. The meeting was called to order by Joseph T. Philipp, M.D., Manhattan, Speaker of the KMS House of Delegates, who introduced a United States Marine Corps color guard for the singing of the national anthem.

Robert D. Durst, Jr., M.D., Topeka, welcomed the delegates on behalf of the Shawnee County Medical Society. Robert E. Barnett, M.D., Chairman of the Annual Meeting Planning Committee, greeted the delegates and offered his thanks to those who had participated in planning the meeting.

Terrie Browning, Clay Center, President of the KMS Auxiliary, introduced several guests who would be speaking at the Auxiliary's Annual Meeting. These included Mary Hanson, of Colorado Springs, Colorado, incoming President of the AMA Alliance. Mrs. Hanson brought "greetings from 60,000 strong advocates of medicine," the AMA Alliance. She stated that the change in the organization's name better implies a partnership between the two groups, and she added that the new name is accompanied by the tagline "Physicians' spouses dedicated to the health of America." Among the AMAA's projects, Mrs. Hanson listed legislation, with a focus on health care reform. The Alliance, she said, stands ready and organized to respond instantly. Also high on their agenda is the issue of family violence, and its related problems. The AMAA helps by raising funds for shelters, providing resource lists to physicians' offices, and teaching good parenting skills. AMAA will continue to raise funds for AMA-ERF and to support medical families experiencing stress. Their goals, she explained, are to assist members of the AMA and the state medical societies to help Americans lead healthy lives, and to support organized medicine.

Terrie Browning presented her annual report,

beginning with thanks to the KMS and Dr. Meidinger for supporting her goals during her presidency. She cited growth, unity and good times as highlights of the year. Mrs. Browning noted that the KMS Auxiliary is a partner of the KMS, and that this relationship produces synergy, enabling both organizations to accomplish much more. She observed that, although the declining membership and disbanding of two county societies were disappointing, she was heartened by the 10% increase this year in registered bone marrow donors. Another success was the Legislative Dinner sponsored by the Auxiliary, which was attended by 40 legislators. The Race Against Breast Cancer, a fund-raiser to increase awareness and provide free mammograms to needy women, was also very successful, as were several other fund-raising projects during the year. In conclusion, she stated that the awesome responsibility of the presidency had been eased by the members' teamwork, and she thanked the Auxiliary for the honor. Mrs. Browning was accorded a standing ovation.

Following Mrs. Browning's report, Cranston J. Cederlind, M.D., President of the Johnson County Medical Society, presented her with a gift with gratitude for her service.

Kermit Wedel, M.D., Minneapolis, introduced Thomas R. Reardon, M.D., of Portland, Oregon, a member of the AMA Board of Trustees. Dr. Reardon reported on the topic of "What's Happening at the National Level, and What Is AMA Doing About It?" He noted that medicine is entering a time of change. Physicians everywhere are wondering what effects this will have on the practice of medicine and contemplating the possible effects on the physician-patient relationship. Physicians, he noted, feel anger at being excluded from planning for reform, on the grounds of being a special interest group. He reminded those present that three years ago the AMA introduced its own program for reform, Health Access America. Dr. Reardon observed that the White House supports managed care, while HHS favors a single-payor system. If national reform is not achieved, he warned, individual states will achieve it unevenly. The federal government might then introduce wage-price controls.



In addition to formulating the Health Access America plan, the AMA is conducting an ad campaign in Washington with the slogan "time for a new partnership," advocating change that puts the patient first. In addition, he said, the AMA favors "rational, not rationed, care; and inclusion, not exclusion." The AMA recently sponsored a national fly-in to Washington as a proclamation of physicians' unity. While in Washington, these physicians offered their assistance through dialogue.

Dr. Todd of the AMA has had open communication with Dr. Shalala and Dr. Magaziner, and other presidential appointees have also engaged in ongoing dialogue with the AMA's representatives. The White House, said Dr. Reardon, is beginning to ask for input from physicians. However, he added that the AMA will also need to be involved with congressional debate on the issue of health care reform.

In closing, Dr. Reardon observed that change is an opportunity to improve the health care system, and that three things will always be true of physicians: they are members of the most prestigious profession, they will always be well paid for their services, and they will always find satisfaction in patient care.

Following Dr. Reardon's address, Dr. Philipp introduced Dr. Meidinger, who gave his President's Report.

Dr. Meidinger stated that it had been an interesting time of change and flux. The direction of medicine's future in Kansas will depend on everyone in this room, since what happens nationally will probably happen locally first. Dr. Meidinger stated that he had learned much about the business of medicine during his travels around the state, and he discovered that health care is the largest economic force in Kansas; it often is the largest employer in a town. Even in a poor economy nationally, the health care industry has grown steadily and has provided an economic boost to local economies.

During his year as President, Dr. Meidinger stated, he tried to build bridges between the Kansas Hospital Association and the University of Kansas Medical Center. He feels KMS members should be proud of the Coddington study, completed this year, which is the first attempt to understand the economics of medicine within a state. Among the findings of this study: Kansas provides medical care at 10% less than its neighboring states and 20% below the national average; cost shifting is the major cause of the rise in costs;

and capital funding represents only 15% of hospital expenditures/overhead.

Recently Dr. Meidinger discovered that the KU Medical Center is on the verge of bankruptcy. He urged the delegates to read his more detailed report on this topic in the March issue of KANSAS MEDICINE. The Medical Center needs better management and more financial support, and will require the help of KMS and others to get out of the state budgetary yoke.

Dr. Meidinger thanked the KMS staff for their work during the year. He asked the delegates to complete the planning questionnaire regarding future meetings. He announced that a KU Ph.D. candidate is requesting that physicians in the seven most populous counties in Kansas complete a questionnaire on the Medicare Primary Care Network. The questionnaires will be mailed to participants, and Dr. Meidinger urged those present to complete them.

Dr. Meidinger thanked Terrie Browning for her active role during the year as Auxiliary President. He urged Kansas physicians to maintain their high standards and their moral and ethical heritage, and to work together for the benefit of patients.

The delegates accorded Dr. Meidinger a standing ovation. Dr. Philipp thanked Dr. Meidinger for his leadership during the year and adjourned the opening ceremony.

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## FIRST SESSION

Dr. Philipp called the First Session of the 134th House of Delegates to order at 9:15 a.m. He explained the composition of the House, outlined the rules by which the meeting would be conducted and stated that the House would follow the *Sturgis Standard Code of Parliamentary Procedure*. He noted that only delegates would be recognized and permitted to vote, and that others should convey their opinions on issues to their delegates. He urged everyone present to attend the Reference Committee meeting following this session. The presence of a quorum was announced, and the minutes of the 1992 meeting were approved.

Dr. Philipp outlined the procedure to be followed for the primary election. Tellers for the primary election were Kermit G. Wedel, M.D.; Warren E. Meyer, M.D.; and Newton C. Smith, M.D.

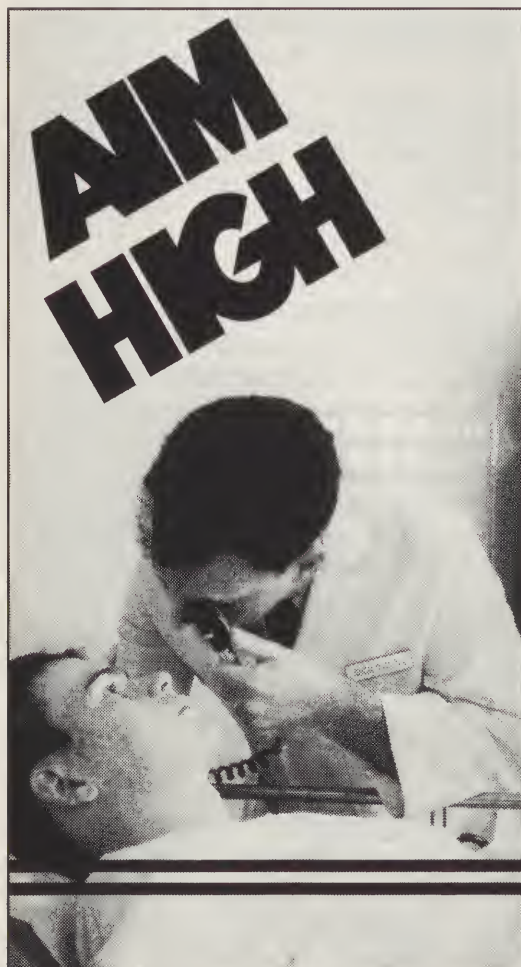
The slate was read, as follows:

President Elect: Donald R. Brada, M.D., Wichita  
 First Vice President: Linda D. Warren, M.D., Hanover  
 Second Vice President: David A. Leitch, M.D., Garnett  
 David K. Ross, M.D., Arkansas City  
 James W. Wilson, M.D., Coffeyville  
 Constitutional Secretary: Mark G. Bell, M.D., Salina  
 Treasurer: Tom Koksai, M.D., Garden City  
 Speaker: Joseph T. Philipp, M.D., Manhattan  
 Vice Speaker: Dee Bell, M.D., Shawnee Mission  
 AMA Delegate: Charles E. Bare II, M.D., Shawnee Mission  
 Jimmie L. Browning, M.D., Clay Center  
 AMA Delegate: Jimmie A. Gleason, M.D., Topeka  
 Larry R. Anderson, M.D., Wellington  
 Richard Preston, M.D., Great Bend  
 Lew W. Purinton, M.D., Wichita  
 AMA Delegate: Robert A. Gollier II, M.D., Ottawa  
 John R. Henwood, M.D., Wichita  
 Linda D. Warren, M.D., Hanover  
 AMA Alternate Delegate: M. Martin Halley, M.D., Topeka  
 Terry L. Poling, M.D., Wichita  
 Darrell D. Werth, M.D., Hays  
 AMA Alternate Delegate: Kenneth P. Kennally, M.D., Sabetha  
 Joseph C. Meek, Jr., M.D., Wichita

The ballots were distributed and the election process explained.

Vice Speaker Dee Bell, M.D., called for the committee reports, noting that some were included in the delegates' notebooks and will not be read. These include:

Ad Hoc Committee on Access to Health Care  
 Continuing Medical Education  
 Geriatric Medicine  
 Impairment and Advocacy  
 Kansas Medical Political Action (KaMPAC)  
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## Constitutional Secretary— Mark G. Bell, M.D.

Kansas Medical Society Membership				
	April 15 1993	Year-End 1992	Year-End 1991	Year-End 1990
ACTIVE	2233	2215	2208	2190
ACTIVE 2ND YEAR	56	63	68	63
ACTIVE 1ST YEAR	32	28	20	21
PROBATIONARY	94	89	65	52
RESIDENT	283	286	247	298
STUDENT	311	315	332	401
ASSOCIATE	42	43	37	34
PERSONAL EXEMPT	15	8	18	14
RETIRED	489	491	466	440
MILITARY SERVICE	1	1	0	0
MILITARY EXEMPT	1	1	1	0
EMERITUS	59	57	56	73
HONORARY	1	1	1	1
TOTALS	3617	3598	3519	3587

## Treasurer — Tom Koksall, M.D.

This report is included in the delegates' notebooks.

## Necrology— Warren E. Meyer, M.D.

Dr. Meyer asked for a moment of silent remembrance following the reading of the names:

Name and City	Age	Date of Death
William H. Algic, M.D., <i>Kansas City</i>	90	12/26/92
Benjamin W. Barker, M.D., <i>Wichita</i>	74	11/10/92
Marian Barnes, M.D., <i>Punta Gorda, FL</i>	95	10/12/92
Avis P. Bray, M.D., <i>Concordia</i>	75	8/20/92
Robert M. Brian, M.D., <i>El Dorado</i>	89	4/18/92
Charles A. Crockett, M.D., <i>Shawnee Mission</i>	73	5/29/92
William R. Doherty, M.D., <i>Palm Desert, CA</i>		(date of death unavailable)
Peter D. Ens, M.D., <i>Hillsboro</i>	76	1/1/91
Farris D. Evans, M.D., <i>Wichita</i>	86	10/8/91
Robert E. Feighny, M.D., <i>Salina</i>	72	9/27/92
Raymond L. Gench, M.D., <i>Carmel, CA</i>	90	11/24/92
David E. Gray, M.D., <i>Topeka</i>	77	4/25/93
Richard H. Greer, M.D., <i>Topeka</i>	84	4/12/93
Lloyd W. Hatton, M.D., <i>Salina</i>	86	4/15/93
Joseph M. Hyland, M.D., <i>Topeka</i>	47	9/13/92
Dwight Lawson, M.D., <i>Topeka</i>	86	7/21/92
Alexander C. Mitchell, M.D., <i>Lawrence</i>	74	12/2/92
Ira R. Morrison, M.D., <i>Atchison</i>	85	3/5/93
Richard O. Nelson, M.D., <i>Lawrence</i>	80	5/11/92
Simon Pollack, M.D., <i>Portland, OR</i>		2/8/93
Robert C. Polson, M.D., <i>Great Bend</i>	75	12/27/92

Harold W. Powers, M.D., <i>Sun City, AZ</i>	90	3/18/93
Ralph R. Reed, M.D., <i>Lawrence</i>	65	11/27/92
Richard S. Roberts, M.D., <i>Lawrence</i>	73	8/15/92
Edgar L. Robinson, M.D., <i>Bella Vista, AR</i>		(date of death unavailable)
Leslie L. Saylor, M.D., <i>Topeka</i>	85	12/6/92
Joseph P. Schaefer, M.D., <i>Lenexa</i>	59	4/26/93
Joseph E. Seitz, Jr., M.D., <i>Ellsworth</i>	70	8/17/92
William H. Shofstall, M.D., <i>Shawnee Mission</i>	80	5/29/92
David P. Trimble, Sr., M.D., <i>Emporia</i>	88	10/22/92
Gordon S. Voorhees, M.D., <i>Leavenworth</i>	79	5/20/92

## Editorial Board— Warren E. Meyer, M.D.

Dr. Meyer announced that he would read the report prepared by David E. Gray, M.D., Chairman of the Editorial Board, who had died the previous week:

Since 1866, the springtimes have brought a steady stream of meetings of the Kansas Medical Society. I haven't been present at all of them — it just seems that way to those of you who have had to listen to me tout the state's leading medical journal. And you are painfully aware that there is a sameness about my reports. This might be a good time for another cup of coffee or a visit to the emergency room required by the previous cups. In short, I can't guarantee this will be notably different from those of the past.

For openers, for example, there is always the matter of finances. Thanks to you and our astute and vigilant business manager, Jerry, and his managers, Val and Susan, we are solvent, but just. Our major contact for national advertising has been the State Medical Journal Advertising Bureau — and still is. However, a minor revolution, brought on by its repeated expressions of optimism which have largely failed to materialize, has resulted in a distinct change of direction in the search for advertising, as well as changes in philosophy and personnel in that group. In the eternal springtime promise, we are looking forward to a new and better day — and, as always, a happier report another year.

The members of the Editorial Board have continued their record of service for which I can, on this occasion, thank them as well as those consultants who have been called upon periodically to pass on matters of special concern. It may have been apparent that we have been pleased to get contributions from younger members of the club and there is a continuing, even growing, symbio-

sis between the medical centers and KANSAS MEDICINE. It is also evident that we have utilized increasingly contributions from other sources which, I suggest, reflects the trend in medical practice toward incorporating other disciplines into our professional service, which is well known to you.

I do have a request. We have considered at some length the use of another survey to determine the form and direction KANSAS MEDICINE should take to fulfill its obligations to you. You are aware that there is a significant increase in the socioeconomic character of content, as well as ancillary subjects in our journal and others. Some publications have gone exclusively to them. Various changes in format have been considered. There have been evolutionary changes for 93 years, but perhaps it's time for a little genetic engineering. So it occurred to me that we might get a sense of direction if we would simply ask you to communicate your thoughts to us.

And now, to assist you in your labors, I leave you by quoting H. S. Roberts who, in 1877, opened his presidential address with these words:

Gentlemen: May, with her floral beauty and her breezes, gentle to all, again welcomes us to our annual gathering. It seems but a day, so rapid is Time's flight, since our discussions were dropped, to be resumed today, our farewells said. Bright islands, these meetings of ours, in the rough sea of professional life. We hail them with pleasure, we leave them freighted with the rare fruit of social and intellectual advancement. May the meeting this year be such that the succeeding ones shall be sought, if possible, with more avidity.

On that note, I shall contribute to President Dick Meidinger's intellectual advancement by presenting him with the traditional bound volume of the year's journals — and get out of the way of your avidity.

---

Dr. Meyer presented Dr. Meidinger with the bound volume. Dr. Meidinger read a resolution in memory of Dr. Gray, and the delegates voted unanimously to introduce this special resolution into the proceedings of the House of Delegates.

#### **RESOLUTION 93-18**

**In Memoriam: David E. Gray, M.D.,  
1916-1993**

WHEREAS, David E. Gray, M.D., had a long and distinguished career in medicine, first as an infantry battalion surgeon in the U.S. Army during World War II, for which he received the

Bronze Star Award with two Oak Leaf Clusters; then as a highly respected obstetrician and gynecologist in Topeka from 1947 to 1970; then as a cytopathologist and geneticist at Damon Laboratories from 1970 to 1984; and finally as Editor and Chairman of the Editorial Board of KANSAS MEDICINE from 1970 to 1993; and

WHEREAS, Dr. Gray strove for professionalism and excellence throughout his career, as exemplified by his memberships in Alpha Omega Alpha Honor Medical Society, the American Medical Association, the Kansas Medical Society and the Shawnee County Medical Society; his contributions to the KMS Committee on Maternal Welfare, with whom in 1953 he developed the "Minimum Standards of Obstetrical Care"; his diligent patient care; and his high editorial standards; and

WHEREAS, Dr. Gray's engaging charm, wit, intellect and friendship were enjoyed by those who knew him, both in the medical community and in the community at large; and

WHEREAS, He will be sorely missed by the members and staff of the Kansas Medical Society and by readers of his columns in KANSAS MEDICINE; therefore be it

*Resolved*, That the Kansas Medical Society extend to his widow, Jean Campbell Gray, and daughters Joan Gray Hartung and Dr. Barbara Gray, our sympathy in their loss; and be it further

*Resolved*, That a copy of this resolution be added to the minutes of the 134th meeting of the Kansas Medical Society; and be it further

*Resolved*, That Mrs. Gray be given a copy of this resolution at an appropriate time.

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#### **KaMMCO—**

**Jimmie A. Gleason, M.D., Medical Director**  
Dr. Gleason reported that it has been a wonderful year for KaMMCO. It is now four years since the founding of the company, and the number of insureds passed the 1,000 mark in January. KaMMCO now has 40% of the Kansas medical malpractice insurance market. (There are nine companies selling such insurance in the state.) The company is very proud of its success in the legal arena.

Dr. Gleason announced the formation of a new company, a totally owned subsidiary. This company will provide office management services, such as turnkey consulting for OSHA regulations, etc. There will also be a products division, featuring volume purchasing of a wide variety of sup-



plies used in physicians' offices. The goal will be to reduce office overhead in medical practices. The new company will be operational this summer.

KaMMCO's goal, Dr. Gleason said, is to be KMS members' advocate. To this end, profits from the new company will be channeled into KaMMCO in order to help reduce insurance premiums.

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### **Kansas Foundation for Medical Care—**

#### **Jay Schukman, M.D., President**

Gerald Pees, Jr., M.D., of Lawrence, Vice President of KFMC, presented the following report for Dr. Schukman, who was unable to attend the meeting:

This will be my last year to make an annual report from the Kansas Foundation for Medical Care, Inc. to the Kansas Medical Society House of Delegates. It certainly has been a privilege to serve on the Executive Committee of KFMC as their Vice-President and President. I will continue to serve on the Board of Directors as Past President. I will also continue my involvement in the PRO on the Pattern Analysis Committee, which is part of the Fourth Scope of Work.

The Medicare Fourth Scope of Work includes the implementation of the Health Care Quality Improvement Initiative (HCQII). It is gratifying seeing the Health Care Financing Administration moving from a reactive stance to a proactive one. They are finally in line with the quality health care arena. One hopes the federal government will also continue to move away from budget-driven decision making. However, with the new emphasis on health care reform, I am not sure that will be the case.

Other highlights of the change to the Fourth Scope of Work include the development of pattern analysis. This calls for a Pattern Analysis Committee, which will take data generated from various sources, including small-area analysis, along with data generated by the specific projects within Medicare. These include the Cooperative Cardiovascular Project, which is studying acute myocardial infarctions, coronary artery bypass graft and angioplasty. Also included will be the Medicare Hospital Information Project, which involves more stratified and more statistically significant data, although there is still a long way to go in evaluating the data. The Pattern Analysis Committee will evaluate these data, whether from

a hospital or a region. The data will then be taken back to the hospital or area, and the Principal Clinical Coordinator (a new position created by the Fourth Scope of Work; details below) will work with the medical staff and hospital in evaluating the significance of the data. This, in a sense, would be a method for evaluating outcomes. Current members of the Pattern Analysis Committee include Jimmie A. Gleason, M.D., Topeka; Hewitt C. Goodpasture, M.D., Wichita; Barbara P. Lukert, M.D., Kansas City; Leon Boor, Abilene; Steve Wilkinson, Garden City; Jim Biltz, Wichita; Arvid Zuber, Ph.D., Shawnee Mission; Joseph Leiker, M.D., J.D., Topeka; Mary Zimmerman, Ph.D., Lawrence; Jay S. Schukman, M.D., Great Bend; and Stephanie Studenski, M.D., M.P.H., Kansas City. There is room for perhaps one or two other representatives to complete this group.

Another feature of the Fourth Scope of Work is the recent appointment of a Principal Clinical Coordinator (PCC), James E. Allen, M.D., of Topeka. In this position, Dr. Allen will be responsible for directing and overseeing many aspects of the new Health Care Quality Improvement Initiative. The PCC will collate data, recommend studies and develop feedback mechanisms under the direction of the Pattern Analysis Committee. There will be a significant interaction with hospitals and medical staffs for their evaluation, assimilation and integration of study outcomes in improving the quality of care they give. Dr. Allen will also act as the chief contact between KFMC and the provider and practitioner communities regarding quality improvement activities.

Taking Dr. Allen's place as Medical Director will be Terry A. Tracy, M.D., Wichita. We are very pleased that Dr. Tracy has accepted a position with KFMC. His clinical experience and his management skills will go a long way towards implementing the review activities of KFMC.

Other items of interest as the Fourth Scope of Work is implemented include the elimination of the severity levels for quality problems and quality-weighted scores, implementation of a documentation review process, a decrease in case review volume to approximately 8% of all claims, PRO re-reviews of cases with confirmed quality problems, and the implementation of the physician reviewer assessment form (PRAF). The PRAF will assist physician reviewers in identifying specific categories of utilization, quality or DRG concerns, which will then aid in the pattern analysis effort.

Over the years that I have served on the Executive Committee, and especially the three years that I have served as President of KFMC, I have had two major goals in mind. The first was to improve the overall review capabilities of the physician reviewers for KFMC. Generally speaking, we have succeeded in that effort. I realize that at times there are people who do have legitimate gripes concerning some of the reviews. However, overall it has improved. We now have approximately 400 physician reviewers for Kansas, which is excellent. We try to maintain a delicate balance between preserving physician autonomy to make decisions versus trying to maintain some degree of consistency, but the only way you'll maintain that consistency is if you have a "cookbook" by which to measure.

In addition, we have tried to improve communications with the physicians of Kansas. At meetings and during my travels, I have attempted to respond to physicians who had any questions. We also have an ongoing liaison with the Kansas Medical Society and the various specialty societies in the state. In particular, we have a quarterly reporting process to the Kansas Medical Society Council. I hope the communications will continue to be open and forthright.

Again, it has been a pleasure to serve the medical community of Kansas. Let us hope for another productive year of improving the quality of care for all Kansans.

Dr. Pees noted that Dr. Schukman has just completed a four-year term on the Executive Committee of KFMC. Don R. Tillotson, M.D., has concluded a 13-year term, and Joseph T. Philipp, M.D., and Douglas Young, M.D., are new members of the Executive Committee.

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#### **Hospital Medical Staff Section— David A. Leitch, M.D.**

Dr. Leitch noted that AMA Resolution 206, requiring medical societies to share information with AMA regarding HMSS activities for purposes of wide distribution, which was introduced by a Kansas committee, passed. A HCFA regional office representative spoke to the HMSS recently regarding the Fourth Scope of Work. Dr. Leitch also advised all physicians to study their hospital bylaws to determine how they affect their practice and, in particular, he urged physicians to be aware of any changes hospitals make in the bylaws. Protect your autonomy by monitoring proposed

changes and participating in negotiations, and watch third-party payors' activities, he advised.

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#### **KMS Executive Director's Report— Jerry Slaughter**

Jerry Slaughter welcomed the delegates to Topeka and invited them to visit the KMS building. The Legislature is still in session, he noted, and still discussing the worker's compensation bill. This issue, he said, had pitted urban/labor against rural interests. Attempts to tie physicians' fees to the Medicare fee schedule were defeated. There will be a fee schedule, but it will be fair.

Mr. Slaughter thanked Dr. Reardon for his informative remarks, and for his good work on behalf of medicine. He complimented the KMS leadership for its hard work. Dr. and Mrs. Meidinger, he said, had worked diligently on behalf of KMS. He praised Dr. Meidinger's accomplishments as President, focusing on the revived liaison with the Kansas Hospital Association and Dr. Meidinger's interest in the financial crisis at KUMC and search for solutions.

Touching on KaMMCO, Mr. Slaughter noted that the company is a source of pride and continues to flourish.

Mr. Slaughter spoke on the impending changes coming to the health care arena. The new administration believes it has a mandate for change and will pursue it. But change begins at home, not in Washington, and therefore he foresees that the Kansas Medical Society will have an opportunity to direct the course of change and to deal with problems in the way we think is best for Kansans.

Physicians, Mr. Slaughter said, must be confident of their important role in the health care system and must think highly of themselves. Physicians should join together to advocate for change that will benefit patients. Unify, he urged the delegates; put aside parochial interests, and set the agenda.

Mr. Slaughter complimented the KMS Council, Executive Committee and other committee members who work day to day to direct the Society in representing a broad spectrum of membership. He also expressed his appreciation to the staff for their commitment and dedication to KMS. He paid tribute to Dr. Gray, saying that he had been at the office daily, had become a member of the "KMS family," and that his counsel and presence will be missed.

Mr. Slaughter noted that March 5, 1993



marked his 20th anniversary at the medical society. The years have passed quickly he said, because his work is a pleasure and he appreciates his employers and their value to society. He thanked KMS for giving him this opportunity.

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The Speaker called for new business. R. A. Nelson, M.D. reminded the delegates that the Kansas Department of Public Health is being revamped. He feels KMS should publicize the issue of public health this year.

The Speaker noted that those resolutions presented so far were automatically introduced. He invited new resolutions in writing from the floor, and four were introduced.

The results of the primary election were announced:

President Elect:	Donald R. Brada, M.D.
First Vice President:	Linda D. Warren, M.D.
Second Vice President:	David A. Leitch, M.D.
	David K. Ross, M.D.
AMA Delegate:	Jimmie L. Browning, M.D.
	Jimmie A. Gleason, M.D.
AMA Delegate:	Larry R. Anderson, M.D.
	Lew W. Purinton, M.D.
AMA Delegate:	John R. Henwood, M.D.
	Linda D. Warren, M.D.
AMA Alternate Delegate:	M. Martin Halley, M.D.
	Terry L. Poling, M.D.
AMA Alternate Delegate:	Kenneth P. Kennally, M.D.
	Joseph C. Meek, Jr., M.D.

The Speaker announced that councilors need to be elected for the following districts: 1, 5, 8, 9, 14 and 16.

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Dr. Philipp announced the composition of the Reference Committee: Robert Barnett, M.D., Topeka, Chairman; Richard Ahlstrand, M.D., Wichita; Debbie Doubek, M.D., Manhattan; John Eplee, M.D., Atchison; and Daniel Pauls, M.D., Parsons.

The Speaker announced that a buffet lunch would be served at noon and reminded the delegates of the joint presidents' installation and reception, followed by Dr. Snow's reception, this evening. The Second Session of the House of Delegates will convene at 8:00 a.m. on Sunday.

The First Session was adjourned at 10:20 a.m.

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## SECOND SESSION

The Second Session of the 1993 KMS House of Delegates was called to order by the Speaker, Dr. Philipp, at 8:08 a.m. on Sunday, May 2, 1993. Rules by which the meeting would be conducted were reviewed, and the presence of a quorum was announced. Ballots were distributed, and the Speaker named the Tellers: Kermit Wedel, M.D., Newton Smith, M.D., and Perry Schuetz, M.D.

The Speaker thanked the members of the Reference Committee for their work and introduced the Committee Chairman, Robert Barnett, M.D., who read the Committee's recommendations for each resolution. Dr. Philipp invited discussion and voting by the delegates. (Results of these actions are printed below.)

The results of the election of officers were announced:

PRESIDENT ELECT: Donald R. Brada, M.D., Wichita

FIRST VICE PRESIDENT: Linda D. Warren, M.D., Hanover

SECOND VICE PRESIDENT: David K. Ross, M.D., Arkansas City

SECRETARY: Mark G. Bell, M.D., Salina

TREASURER: Tom Koksall, M.D., Garden City

SPEAKER: Joseph T. Philipp, M.D., Manhattan

VICE SPEAKER: Dee Bell, M.D., Shawnee Mission

AMA DELEGATE: Jimmie A. Gleason, M.D., Topeka

AMA DELEGATE: Lew W. Purinton, M.D., Wichita

AMA DELEGATE: Linda D. Warren, M.D., Hanover

AMA ALTERNATE DELEGATE: Terry L. Poling, M.D., Wichita

AMA ALTERNATE DELEGATE: Joseph C. Meek, Jr., M.D., Wichita

The Speaker called for unfinished business, and there was none. He called for new business, and Dr. Meidinger introduced Resolution 93-23, Commendation for Val Braun, which was adopted by acclamation. (The text is printed below.)

Kevin Hoppock, M.D., Wichita, introduced Resolution 93-24, Commendation for the Shawnee County Medical Society and Alliance (see below), which was adopted by the Delegates.

Angela Meyer, a student at the medical school's Wichita campus, thanked the Kansas Medical Society for its support of students. She expressed appreciation for Dr. Meek's assistance in his capacity as Dean.

The Speaker invited Dr. Snow, the newly elected President, to address the House.

Dr. Snow commended Dr. Meidinger and summarized his accomplishments as President, highlighting his work in forming liaisons between KMS and KHA, and between KMS and KUMC. He reiterated Dr. Meidinger's statement that the Legislature needs to help KUMC with its fiscal problems. Dr. Snow stated that he plans to keep building the bridges begun by Dr. Meidinger and Terrie Browning and will work closely with Alliance President Cathy Wilcox. During his year as President, he said, he will move forward positively to seek solutions to the problems confronting medicine.

Dr. Snow announced the results of the Council District elections:

District #1: John R. Eplee, Atchison;

District #5: Steve Haug, M.D., Manhattan;

District #8: Newton C. Smith, M.D., Arkansas City;

District #9: Alan L. Kruckemyer, M.D., Salina;

District #14: Perry N. Schuetz, M.D., Great Bend;

District #16: John Rand Neuenschwander, M.D., Hoxie.

Dr. Snow installed Joseph T. Philipp, M.D., Manhattan, as Speaker of the House of Delegates, and Dee Bell, M.D., Shawnee Mission, as Vice Speaker. Before turning the podium over to Dr. Philipp, Dr. Snow wished the delegates a safe trip home and reminded them to buckle up in their cars.

The Speaker announced that a Council meeting would follow adjournment of this meeting. The next KMS Annual Meeting will be held in Manhattan from April 28 through May 1, 1994.

There being no further business, the 134th Annual Meeting of the Kansas Medical Society was adjourned at 9:15 a.m.

## Resolutions

*Those resolutions that were not adopted but were referred for further study or information are so indicated. The resolutions that failed to pass are retained in the official minutes at the executive office, but are not reported here. An asterisk following the resolution number indicates a change in the Constitution and By-Laws.*

### RESOLUTION 93-1

#### Expiration of 1988 Resolutions

"Official policies established through resolutions at the House of Delegates shall be in effect for a period of five (5) years, at which time that policy position will be reviewed by the Executive Committee and will expire subject to the approval by the House of Delegates unless superseded or continued by another resolution."

Attached is a copy of the 1988 resolutions which are scheduled to expire this year. Changes in the bylaws shall remain in effect until such time as they are amended by the House of Delegates.

*Recommend* bylaws remain in effect. *Recommend* re-adoption of:

88-8 Kansas Foundation for Medical Care — Endorsement.

*Recommend* that all other 1988 resolutions expire unless readopted by the KMS House of Delegates.

### RESOLUTION 93-2\*

#### Reduced Dues for Semi-Retired Physicians

WHEREAS, An increasing number of physicians age 65 and over are reducing the number of hours they work each week; and

WHEREAS, This results in a reduced amount of disposable income; and

WHEREAS, KaMMCO has recognized this and offers a reduced professional liability insurance premium for part-time physicians; and

WHEREAS, The AMA has adopted a reduced dues provision for physicians age 65 and over who work less than 20 hours per week; therefore be it

*Resolved*, That the bylaws be amended by inserting the following language:

1.6126 Semi-Retired Physicians — Physicians age 65 and over who work less than 20 hours per week shall pay 50% of regular dues and assessments.



### **RESOLUTION 93-3\***

#### **Reduced Dues Provisions for Medical School Faculty**

*Resolved*, That the Kansas Medical Society amend its bylaws as follows:

1.6129 Medical School Faculty (1st Year):

Physicians joining the full-time faculty for the first year, whose activities are predominantly teaching, administration or research in approved medical schools. They shall pay fifty percent (50%) of the regular dues and assessments.

1.6130 Medical School Faculty (2nd Year):

Physicians remaining on the full-time faculty for the second year, whose activities are predominantly teaching, administration or research in approved medical schools. They shall pay seventy-five percent (75%) of the regular dues and assessments.

### **RESOLUTION 93-4**

#### **Reduced AMA Dues for Medical School Faculty**

WHEREAS, The AMA has recognized the importance of providing membership incentives to

physicians in large group practices by offering a dues discount of 20% when 100% of the physicians join; and

WHEREAS, There is a need to increase AMA membership among the medical school faculty; therefore be it

*Resolved*, That the Kansas Medical Society submit a resolution to the AMA House of Delegates requesting that the large group practice dues discount program be extended to medical school faculty.

### **RESOLUTION 93-5**

#### **Supply of Primary Care Physicians**

WHEREAS, There is a critical shortage of primary care physicians; and

WHEREAS, There is a maldistribution of primary care physicians; and

WHEREAS, There is a nationwide call for health care reform; and

WHEREAS, Access to care is a major problem for many Kansans; and

WHEREAS, Adequate numbers of primary care physicians will improve access to care; and

WHEREAS, There is a need for comprehensive

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screening and preventive medicine for all Kansans in order to reduce health care costs and improve the health of all Kansans; therefore be it

*Resolved*, that in order to achieve adequate numbers of primary care physicians, including an adequate supply in underserved areas, the Kansas Medical Society urges the Kansas Legislature to enact legislation to provide additional funding to the Kansas University Medical Center budget as an incentive to assure these objectives are addressed.

#### **RESOLUTION 93-6\***

##### **Composition of Executive Committee and Council**

*Resolved*, That the Kansas Medical Society by-laws be amended as follows:

8.11 Members of the Council are the President, President Elect, *Immediate Past President*, First Vice President, the Second Vice President, Secretary, Treasurer, and Speaker and Vice Speaker of the House, Delegates and Alternate Delegates to the American Medical Association, ~~and~~ a Councilor from each Council District, *and the Chairman of the Board of KaMMCO*.

8.12 Associate membership of the Council includes alternate councilors and one (1) representative each from the University of Kansas School of Medicine, the Kansas State Board of Health, the Kansas State Board of Healing Arts, ~~and~~ one (1) representative each from recognized specialty organizations *and the President of the KMS Alliance*. Associate members may attend plenary sessions of the Council but shall not be entitled to vote.

8.15 The Executive Committee of the Council shall be composed of the President, the President Elect, the Immediate Past President, the First Vice President, the Second Vice President, the Secretary, the Treasurer, the Delegates *and Alternate Delegates* to the AMA, the Speaker and Vice Speaker of the House of Delegates, *and the Chairman of the Board of KaMMCO*. The Chairman of KMS Services, Inc., *the President of the KMS Alliance*, the President of the Kansas Foundation for Medical Care and the Chairman of the KMS Hospital Medical Staff Section shall be ex-officio, non-voting members. The committee shall meet regularly and at least six (6) times during each year at the call of the President, and shall have authority to act in the interim between meetings of the Council upon all matters which would ordinarily require approval by the Council,

which do not properly necessitate a special meeting of the Council and which have not been delegated elsewhere by these By-Laws.

#### **RESOLUTION 93-7**

##### **Medical School Faculty Representation on Council**

*Resolved*, That the Kansas Medical Society President be authorized to invite a physician member of the Medical School Faculty Executive Committee to attend the Kansas Medical Society Council meetings as an ex-officio member.

#### **RESOLUTION 93-8**

##### **Public Placement of Resuscitation Masks**

*Not adopted.*

#### **RESOLUTION 93-9\***

##### **Kansas Neurological Society**

*Resolved*, That the Kansas Medical Society by-laws be amended at Section 4.5817, to delete the Kansas Neurological Society as a recognized specialty section in the House of Delegates.

#### **RESOLUTION 93-10**

##### **Establishment of a KMS Negotiating Entity**

WHEREAS, The current status of health care is in a stage of reform of unknown direction and impact on the present system; and

WHEREAS, There is every reason to believe that the plan will involve managed programs in a competitive environment; and

WHEREAS, Insurance companies and hospitals are already beginning to position themselves to take advantage of such a marketplace; and

WHEREAS, The average physician does not possess the necessary skills to effectively represent his/her interests in this arena; therefore be it

*Resolved*, That the Kansas Medical Society instruct the Executive Committee and Futures Task Force to immediately begin to seek avenues, assess information, and explore possible liaisons in an effort to produce a model or an entity that can be used to effectively allow the interests of the physicians to be adequately and fairly represented in the coming restructuring of the health care system, and be it further

*Resolved*, That a status report be presented at the September Council meeting.



#### **RESOLUTION 93-11**

##### **KMS Auxiliary President Ex-officio Member of KMS Executive Committee and Council**

*Not adopted. Combined with 93-6.*

#### **RESOLUTION 93-12**

##### **Terrie Browning, Kansas Medical Society Auxiliary President**

WHEREAS, Terrie Browning has served as President of the Auxiliary of the Kansas Medical Society in 1992 and 1993; and

WHEREAS, During that time Terrie Browning has contributed significantly to our awareness of the issue of elder care and elder abuse in a clear and poignant manner; therefore be it

*Resolved*, That the Kansas Medical Society commend and express its deep appreciation to Terrie Browning for her service to Kansas physicians, members of the Auxiliary, as well as to all Kansans.

#### **RESOLUTION 93-13**

##### **Support of Medical IRAs as a Better Option than Managed Competition**

*Not adopted. Referred to Futures Task Force for study.*

#### **RESOLUTION 93-14\***

##### **Rules of Order**

WHEREAS, The Sturgis' Standard Code of Parliamentary Procedure is no longer in print; and

WHEREAS, The American Medical Association has adopted Davis' Rules of Order to guide its business meetings; therefore be it

*Resolved*, That the Kansas Medical Society amend its bylaws as follows:

##### **12.0 RULES OF ORDER**

Deliberations of this Society and its subsidiary Council, sections, commissions and committees shall be governed by these By-Laws, and when not otherwise specified by the provisions of ~~Sturgis' Standard Code of Parliamentary Procedure~~ *Davis' Rules of Order*.

"The Rules of Order and By-Laws of this Society may be suspended at any time by a vote of two-thirds of those delegates present."

#### **RESOLUTION 93-15**

##### **Individual Responsibility**

WHEREAS, Individuals choose the lifestyle they live, and

WHEREAS, Most physicians agree that lifestyle choices significantly determine whether an individual will ever develop a particular disease process, and

WHEREAS, Lifestyle changes are an integral part of any preventive medicine program, and

WHEREAS, Escalating health care needs place greater health care financing pressures on our medical delivery system to find new ways to reduce costs, and

WHEREAS, It will be increasingly difficult to fund the present levels of benefits into the next century, and

WHEREAS, A fundamental part of our American Capitalist system is to reward each individual financially for their accomplishments, therefore be it

*Resolved*, That the Kansas Medical Society encourage health care plans to use positive monetary incentives to encourage each individual to adopt healthy lifestyles; and be it further

*Resolved*, That the Futures Task Force study the feasibility of incorporating this concept into a health care reform plan.

#### **RESOLUTION 93-16**

##### **Training of Advanced Registered Nurse Practitioners**

WHEREAS, The chronic problem of distribution and supply of primary care physicians and the resultant effect on access to care in rural areas continues; and

WHEREAS, There is growing interest in utilizing the services of mid-level practitioners such as advanced trained nurses working in physician-directed health care teams to provide care in such areas; and

WHEREAS, The state of Kansas is increasing the number of advanced registered nurse practitioner training programs in order to meet this need; and

WHEREAS, For such nurses to be fully integrated into patient care delivery in rural areas it is imperative that physicians be involved in the development of curriculum and training of nurse practitioners; therefore be it

*Resolved*, That the Kansas Medical Society encourage the University of Kansas Medical Center and other institutions which sponsor ARNP train-

ing programs, to involve physicians in the development of curriculum and training of nurse practitioners, in order to assure quality and improve chances of assimilating nurse practitioners into primary care practice settings.

#### **RESOLUTION 93-17**

##### **Futures Task Force**

WHEREAS, There is a high probability that the enactment of health care reform will cause a major restructuring of the health care delivery system; and

WHEREAS, Insurance companies, managed care organizations and hospitals are beginning to prepare for the new system by becoming vertically integrated through the purchase of physician practices; and

WHEREAS, The expected restructuring and consolidation of delivery systems could substantially affect a physician's ability to exercise independent clinical judgment free of corporate, non-physician intervention; and

WHEREAS, As the major providers of medical care to Kansans, physicians have a unique perspective on the relationship between quality access and cost of health care; and

WHEREAS, The restructuring of the health care system presents a significant opportunity for physicians to organize behind a unified effort to help direct change; therefore be it

*Resolved*, That the President, with the approval of the Executive Committee, be directed to appoint a task force to study the feasibility of establishing a statewide physician organization to coordinate, administer and deliver comprehensive health care services to Kansans; and be it further

*Resolved*, That the task force be broadly representative of physicians, taking into consideration specialty, geography and the various practice arrangements; and be it further

*Resolved*, That the task force present a status report of its work at the September Council meeting.

#### **RESOLUTION 93-18**

David E. Gray, M.D., 1916-1993  
(See page 164.)

#### **RESOLUTION 93-19**

##### **Structure of the Healing Arts Board**

*Resolved*, That the Kansas Medical Society Ex-

ecutive Committee be directed to seek enactment of legislation which either creates a separate board which licenses only doctors of medicine and osteopathy, or which seeks to achieve proportional representation of licensees currently licensed by the Healing Arts Board.

#### **RESOLUTION 93-20**

##### **Radiologists, Anesthesiologists and Pathologists Under DRG Format (RAP-DRG)**

WHEREAS, The Clinton Administration has proposed to pay radiologists, anesthesiologists and pathologists under a DRG format for 1994 called RAP-DRG; and

WHEREAS, A similar proposal was rejected by the Congress in 1987; and

WHEREAS, Radiologists, anesthesiologists and pathologists are recognized as medical services under Medicare Fee Schedule of 1989; and

WHEREAS, Such a proposal to pay for these services under a DRG would infringe on physician-patient relationships by forcing these specialists to become employees of institutions; and

WHEREAS, There is nothing to prevent the Administration from including other medical specialties under a DRG payment scheme; and

WHEREAS, Such a proposal to include these services is counter to the Clinton Administration's proposal for accountability of individual services; be it

*Resolved*, That the Kansas Medical Society express its opposition to the Clinton Administration's proposal to institute a RAP-DRG; and be it further

*Resolved*, That the Kansas Medical Society contact the Kansas Congressional Delegation advising them of its opposition to any payment plan which combines medical and institutional reimbursement.

#### **RESOLUTION 93-21**

##### **Practice Parameters**

WHEREAS, Practice parameters are national strategies for patient management, developed to assist physicians in clinical decision making; and

WHEREAS, Some goals of practice parameters are to assure the appropriateness of health care services by eliminating any existing levels of unnecessary care; constrain the rate of increasing health care costs; modification of physician practice patterns; and



WHEREAS, Some medical care leaders have recommended that since practice parameters define proper medical care in specific circumstances that their use serve as a defense against charges of negligence. The State of Maine has passed such related enabling legislation; and

WHEREAS, the costs associated with medical professional liability insurance significantly affect total health care expenditures; therefore be it

*Resolved*, That the concept of utilizing nationally recognized and accepted practice parameters as an affirmative defense in medical negligence be referred to the Kansas Medical Society's Professional Liability Committee for review and evaluation, this report to be submitted to the KMS Council for consideration and appropriate action prior to the 1994 Legislative session.

### **RESOLUTION 93-22**

#### **Medical Care Insurance**

WHEREAS, Obtaining medical care insurance for physicians, their dependents and office personnel at reasonable rates presents recurring problems; and

WHEREAS, The medical insurance program currently sponsored by the Kansas Medical Society through Blue Cross Blue Shield of Kansas is not a true group health insurance plan; and

WHEREAS, Some physicians are of the opinion that the current sponsored plan coverage through the Blues is too expensive; and

WHEREAS, The KMS staff, through the appropriate committee, has initiated steps to evaluate the feasibility of organizing and offering to Kansas physicians medical coverage through a group plan; therefore be it

*Resolved*, That the KMS House of Delegates indicate its support and endorsement for developing and offering an affordable medical care plan to the members of the Kansas Medical Society; and be it further

*Resolved*, That this benefit program be made available as soon as possible if it is determined that such a plan is feasible and has the necessary support of Kansas physicians to make the offering of such a program economically practicable.

### **RESOLUTION 93-23**

#### **Commendation for Val Braun**

WHEREAS, Val Braun began her career with the Kansas Medical Society in 1959; and

WHEREAS, Val will be retiring at the end of January 1994; and

WHEREAS, Val has served the KMS in a variety of capacities, including managing editor of the Journal, staff supervisor of the Impaired Physicians Program, liaison with numerous state agencies, staff to the KMS AMA Delegation, and most recently as Associate Executive Director with multiple responsibilities; and

WHEREAS, Val exemplifies honor, professionalism and integrity; therefore be it

*Resolved*, That the House of Delegates of the Kansas Medical Society expresses its deepest appreciation to Val Braun for 35 years of outstanding service to the Kansas physicians; and be it further

*Resolved*, That Val Braun be granted honorary life membership in the Kansas Medical Society in recognition of her inestimable contribution to the KMS; and be it further

*Resolved*, That the December 1993 issue of KANSAS MEDICINE be dedicated to Val Braun, so a record of her career with the Kansas Medical Society may be made a part of the permanent archives.

### **RESOLUTION 93-24**

#### **Commending the Shawnee County Medical Society and the Shawnee County Medical Alliance**

WHEREAS, The Shawnee County Medical Society and the Shawnee County Medical Alliance have been most excellent hosts to the 134th Annual Session of the Kansas Medical Society's House of Delegates, April 29 to May 2, 1993; and

WHEREAS, They have provided for the improvement of the body, mind, and spirit of the members and their spouses through the athletic, educational, and recreational programs so well planned and conducted in capital fashion; and

WHEREAS, The proceedings conducted in our state's capital have been without a hint of scandal or worker's compensation, and without the threat of veto or filibuster; and

WHEREAS, Dr. and Mrs. Meidinger (Dick and Barbara) were most generous in opening their home to the membership following the AMA-ERF function; therefore be it

*Resolved*, That the delegates and members of the KMS here assembled recognize and thank the

*(Continued on page 179.)*

# Gonorrhea in Kansas, 1992

**G**onorrhea is second only to chlamydia as the most commonly reported sexually transmitted disease in Kansas. There were 4,404 cases reported in 1992. This represented a 5% decrease from the number of cases reported during 1991. The incidence of gonorrhea in Kansas in 1992 was 177 cases per 100,000 population (Figure 1). For comparison, the rate for the United States in 1991, the last year for which data are available, was 250 cases per 100,000.

Gonorrhea was reported by 57 (54%) counties in the state during 1992 (Figure 2). Four counties had 84% of the reported gonorrhea cases (Sedgwick: 1,387; Wyandotte: 1,229; Geary: 541; and Shawnee: 541). The highest rates of gonorrhea were recorded by the same four counties: Geary (1,853 cases per 100,000); Wyandotte (766 cases per 100,000); Sedgwick (338 cases per 100,000); and Shawnee (333 cases per 100,000).

The median age of patients with gonorrhea was 22 years (Figure 3). Sixty-five percent of all reported cases occurred in persons 15 to 24 years of age. The rate for males (188 cases per 100,000) was slightly higher than the rate for females (168 cases per 100,000). The gonorrhea rate was 2,002 cases per 100,000 for blacks, 82 cases per 100,000 for American Indians, 54 cases per 100,000 for Asians, and 34 cases per 100,000 for whites. The rate for Hispanics (149 cases per 100,000) was lower than the rate for non-Hispanics (179 cases per 100,000).

Four percent of gonorrhea isolates showed evidence of drug resistance in 1992. Because of this, penicillin is no longer recommended for treatment. The currently recommended regimen is ceftriaxone 250 mg intramuscularly once, or ciprofloxacin 500 mg orally once. Treatment should be followed by doxycycline 100 mg orally two times a day for 7 days for coexisting chlamydia infection.

The 1992 data indicate that although the overall rate of gonorrhea continues to decline in Kansas, the disease is still hyperendemic in certain counties, age groups and racial groups. All cases of gonorrhea should be reported to the local or state health department to insure appropriate follow-up (i.e., case investigation and contact tracing).

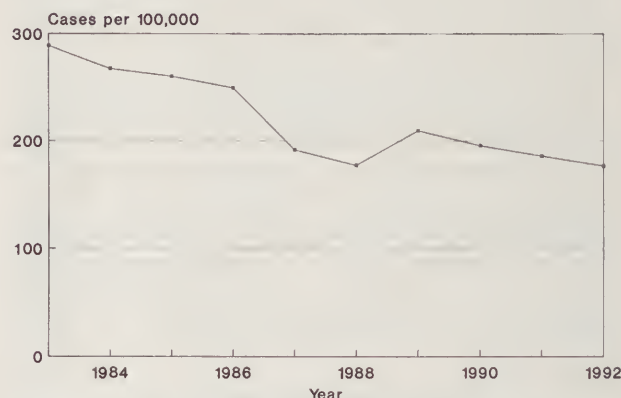


Figure 1. Gonorrhea rate by year: Kansas, 1983-92.

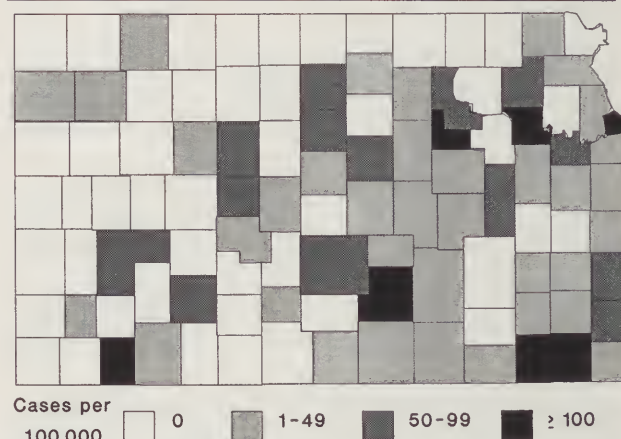


Figure 2. Gonorrhea rate by county: Kansas, 1992.

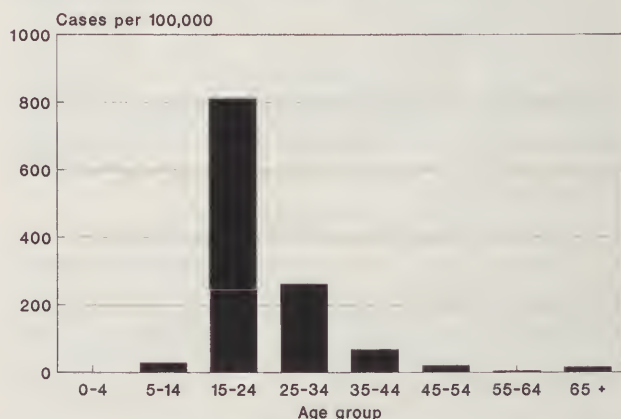


Figure 3. Gonorrhea rate by age group: Kansas, 1992.

Reported by: Sexually Transmitted Diseases Section, Bureau of Disease Control, Kansas Department of Health and Environment.



# Eosinophilia-Myalgia Syndrome and Fasciitis with an Active Alveolitis

DIGPAL CHAUHAN, M.D.,\* AND CHARLES E. MENGEL, M.D.†

**L**-tryptophan has been used widely for a variety of indications including insomnia, premenstrual syndrome and weight loss. Recently it has been linked to a number of clinical syndromes, including the eosinophilia-myalgia syndrome (EMS) and eosinophilic fasciitis.<sup>1,3</sup> The patient described herein met the criteria for this problem and was also shown to have an interstitial lung disease.

## Case Report

A 64-year-old male was first admitted to this hospital complaining of fatigue, myalgias, muscle cramps, weight gain and a swelling of his arms and legs. Examination showed non-pitting edema of the ankles, wrists, forearms and lower legs and a morbilliform rash on the abdomen. He had been taking L-tryptophan, 1 gm daily, for six months for insomnia.

Laboratory data revealed an ESR of 112 mm/hr, LDH of 385 iu/l, a total WBC of 10,000/mm<sup>3</sup>, and a peripheral eosinophilia ranging from 14 to 47%. The absolute eosinophil count was 1170/mm<sup>3</sup>. A bone marrow examination showed proliferative eosinophilia. On evaluation, tests for other causes of peripheral eosinophilia were negative. At this point, L-tryptophan was discontinued, and the patient was sent home. He was readmitted a few months later with continued complaints of fatigue and the development of new exertional dyspnea. The patient had a 75-pack/year history of smoking. There was no history of ethanol abuse, nor exposure to vinyl chloride. He had worked as a grain inspector for 32 years.

At this time, he had the new finding of bi-basilar "velcro" crackles in his lungs. There was no lymphadenopathy or hepatosplenomegaly. There was no clubbing, dermatographism or digi-

tal ulcerations. The skin of the arms was indurated with regular dimpling and puckering (Figure 1). The skin over the chest also showed changes suggestive of scleroderma.

Laboratory data showed a hematocrit of 35% with normocytic indices. The WBC was 10,400/mm<sup>3</sup>, with 11% eosinophils. ESR was 40 mm/hr. CPK, LDH, aldolase, ALT, AST, IgG, IgE, C3 and T-helper/suppressor ratios were normal. C4 was decreased at 9 mg/l. Serum ANA was positive with a homogenous pattern. The anti-DNA antibody was negative.

A chest x-ray (Figure 2) revealed definite bi-basilar reticular infiltrates. This was compared with a chest x-ray taken one year previously, which had been read as normal; however, on review it showed some changes suggestive of an early reticular pattern. Blood gases showed a PaO<sub>2</sub> of 51 mm Hg at room air. Pulmonary function and diffusing capacity studies were compatible with a mild obstructive and restrictive lung disease with a moderate to severe reduction of diffusing capacity. A gallium lung scan showed increased bilateral uptake in both lung bases, suggesting an active alveolitis. A MUGA scan revealed normal systolic function of both ventricles.

Muscle biopsies from both deltoid areas (including skin and fascia) were compatible with eosinophilic fasciitis and the EMS.

Lung tissue obtained by open lung biopsy showed a heterogenous interstitial infiltrate with a variable degree of fibrosis. Alveolar spaces also contained macrophages, lymphocytes and neutrophils, but few eosinophils. The majority of the vessels were thickened with both intimal and medial hypertrophy. These changes were thought to be most compatible with a diffuse interstitial fibrosis, probably of the DIP-UIP (desquamative interstitial pneumonia-usual interstitial pneumonia) type. There was no fibrinoid necrosis, and no lipid-laden macrophages or granulomas were seen.

The patient was started on 60 mg of prednisone daily, and within two weeks he showed dramatic clinical improvement. His exercise tolerance and

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Figure 1. Skin of right arm, showing irregularity and dimpling.

gas exchange improved, and his  $\text{PaO}_2$  on room air was 67 mm Hg. After six weeks, the induration of the skin had also improved markedly, and the puckering and dimpling had disappeared.

### Comment

This patient clearly displayed many of the features and findings of the EMS. He also manifested an accelerated course of an interstitial pneumonitis which did not appear to have the characteristics described in the Mayo series.<sup>5</sup> Their findings included extracellular major basic protein deposition and many intact eosinophils, which were not present in our case. Thus, a relationship of the EMS and the pulmonary findings in our patient cannot be conclusively established.

Etiologic factors suggested in the EMS have included contaminants, and metabolites of tryptophan.<sup>2</sup> Furthermore, abnormalities of L-tryptophan metabolism have been suggested in some patients with scleroderma and eosinophilic fasciitis and in patients with ethanol abuse or pyridoxine deficiency and those taking certain antidepressant drugs.<sup>2</sup>

In addition, the EMS associated with L-tryptophan use seems to resemble the "toxic oil syn-

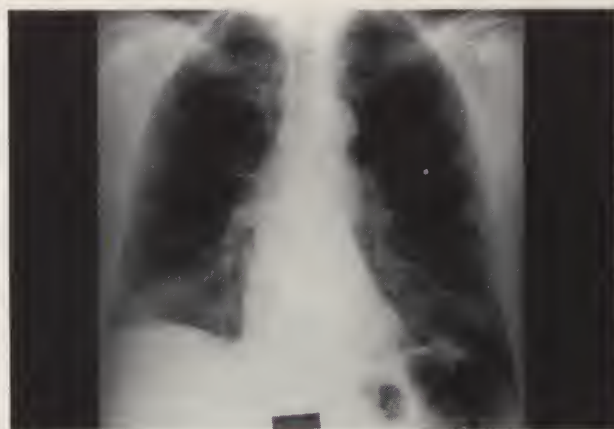


Figure 2. Chest x-ray revealing bi-basilar reticular infiltrates.

drome" first described in Spain in 1981.<sup>6,7</sup> At that time, large numbers of patients developed a syndrome of myalgias, myopathy, eosinophilia, scleroderma-like skin changes and atypical pneumonitis with pulmonary infiltrates after ingestion of contaminated rapeseed oil. The exact contaminant was never positively identified, but aromatic amines (used to denature the oil), quinolines and kynurenine were suspected.

The clinical features of the EMS might also suggest an autoimmune mechanism, especially since the onset of the process appears to be independent of dose or duration and progression can continue after discontinuing the L-tryptophan. These mechanisms were recently discussed by the Mayo investigators.<sup>5</sup>

### Summary

This patient clearly had the EMS with eosinophilic fasciitis, apparently due to L-tryptophan. He also had an active alveolitis with a DIP-UIP-like picture. The lung findings were not similar to those reported in the Mayo series. It is perhaps most likely that his interstitial lung disease was of the cryptogenic variety and unrelated to the L-tryptophan. However, a more direct association cannot be ruled out until more cases with similar findings are thoroughly evaluated. We suggest that special consideration of pertinent studies for interstitial lung disease is merited in all patients with suspected EMS. These might include diffusing capacity, gallium scans of lungs, bronchoalveolar lavage and possibly lung biopsy.

### REFERENCES

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## ALLIANCE NEWS

(Continued from page 150.)

health care reform plan takes shape in our state and nation. We are ready with a team of volunteers.

Terrie has commended the leadership of this organization to me. With humility and honor and *hope*, I accept it from the power of all the past, to the work of the present. I will attempt to lead the banner of hope into the future.

The wonderful working relationship between the medical society and alliance, as evidenced by this joint installation, is envied across the nation. I look forward to being an active partner in leadership this year with Dr. Snow. Together we will face the changes with hope and action. Thank you.

*Cathy Wilcox*

## THE WAY IT WAS

(From the Journal of the Kansas Medical Society, June 1916.)

### THE PROFESSION AND THE MEDICAL SCHOOL

The action of the authorities of the medical school, in asking for a committee from the Kansas Medical Society to keep in touch with its condition, should be of no little advantage to the profession and the school. While this committee may not have, — and probably should not expect to have, — any voice in the management of the school, its report of the work being accomplished, and its suggestions as to how the profession can best aid in the future development of medical education in Kansas, will help at least to establish a clearer relation between the school and the profession.

It is unfortunate for the medical department, as well as other departments of the University, that a few hundred dollars in salary should deprive the school of some of the best members of its faculty. The sentiment in Kansas has always been most favorable to its educational institutions, and although some legislative bodies have been inclined to restrict appropriations for these institutions, the voice of the people has continually been for better educational facilities.

The personnel of the faculty of a medical school is a factor of no small consideration in its success and popularity. Men are known in medicine by their work and their value to the institution with which they are associated should increase with the volume of their work and the extent of their reputations.

It is rumored that some of the strong and progressive men on the faculty of the medical school may be allowed to accept more lucrative positions in other institutions. We cannot blame them for being tempted by an increased salary, but it is no particular credit to Kansas that its good men must look elsewhere for a proper compensation for their services.

## CLASSIFIED ADVERTISEMENTS

*Classified advertisements are \$7.50/line for KMS members; \$9.50/line for non-members; 5-line minimum. Payment must accompany copy. Deadline is 20th of the month preceding month of publication. Box numbers are available at no charge. All advertisements are accepted subject to approval by the Editorial Board.*

SCHOLARSHIP FUNDS available to qualifying physicians. May be used for study in medicine or health care lasting 4 to 12 months at an approved institution. Applicants must have practiced continuously in Kansas for at least 5 years and may not be a member of a group of participating physicians larger than 5. Deadline for applications is July 31, 1993. Write Earl L. Mills Educational Trust, Kansas State Bank and Trust, KSB&T Building, 123 North Market, Wichita, KS 67202.

OFFICE SPACE/SHARED MANAGEMENT SERVICES. Shawnee Mission, Kansas: Our established medical practice is seeking a private practitioner to lease space in our free-standing building. Complete practice management services are available at tenant's option. Very reasonable rates. Call 913-432-0625.

FAMILY PRACTICE physician is planning to retire as soon as a replacement is found. This is a great opportunity to either take over a solo practice or join with two others. The community is very proud of its citizens, schools and hospital. The hospital was newly built and equipped in 1989. Excellent compensation package with school loan repayment program available. Contact Ed Riley, Nemaha Valley Community Hospital, 1600 Community Drive, Seneca, KS 66538; 913-336-6181.

BC/BE General Surgeon, OB-GYN, Psychiatrist, Urologist, Family Practitioner, Pediatrician, Pulmonologist, Occupational Medicine for midwest. Competitive guarantees, fringes, interview/relocation paid. Call S. Schipper, 319-236-1111; fax: 319-236-0376; or write 807 Riverside Drive, Waterloo, IA 50703.

MISSOURI: Gastroenterologist. Seeking second BC/BE gastroenterologist to join busy, well-established gastroenterology practice in growing, picturesque midwestern town of 10,000 serving an area of 75,000. Located 40 minutes west of St. Louis, Missouri. Office endoscopy facilities available. Affiliation with excellent community hospital with excellent GI laboratory facilities. Interested applicants should send CV to Eugene Tucker, MD, FACG, FACP, 800 East Fifth Street, Suite 212, Washington, MO 63090.

OB/GYN, INTERNAL MEDICINE, FAMILY PRACTICE — Strelcheck & Associates, Inc., currently represents Family Practice positions in Illinois, Kansas, Nebraska, Ohio, Texas and Wisconsin — some near the Minnesota border; Internal

Medicine positions in New York, Ohio and Wisconsin; OB/GYN positions in southeastern Wisconsin. We would be happy to provide you with further information. Please call toll-free, 1-800-243-4353, or send your CV to Strelcheck & Associates, Inc., 10624 N. Port Washington Road, Mequon, WI 53092.

PHYSICIANS. Opportunities exist at this 148-bed medical center for a BC/BE Family Practitioner to work in our ambulatory care section, and a BC/BE Internist to provide inpatient care. Join the nation's largest health care team. Enjoy regular hours (8:00 a.m.-4:30 p.m.) weekdays, with weekends off. Must meet English proficiency requirement. Competitive salary with excellent benefits. Experience Grand Island, Nebraska, named one of the 50 best towns in America and three-time recipient of the All-American City award. Contact or send CV to: Dormond Metcalf, M.D., Acting Chief of Staff, VA Medical Center, 2201 N. Broadwell, Grand Island, NE 68803; 308-389-5106. EOE.

DERMATOLOGY, GASTROENTEROLOGY, NEUROSURGERY, Occupational Medicine, Oncology, Orthopedics, Orthopedics-Hand, Urology — Strelcheck & Associates Inc., an extension of our clients' recruiting departments, has positions available in Wisconsin, Ohio, and Michigan. We would be happy to provide you with further information. Please call 1-800-243-4353, or send your CV to Strelcheck & Associates, Inc., 10624 N. Port Washington Road, Mequon, WI 53092.

IT'S YOURS! Existing practice netting \$200,000 after expenses, at *no cost to you!* Hospital has fixed MRI & CT scanner. Just completed \$3.9 million renovation. Specialists: Orthopaedics, Pathology. 4-A school produced two of the top four debaters in the nation. Bass fishing lakes, hunting, it's all there. \$150,000 buys nicest homes. Tumbling/gymnastics team has toured Germany and New Zealand. I've personally visited this community. Call David M. Reeves, Harris Kovacs Alderman, at 800-677-7987, ext. 3-087, or fax your CV to 214-518-2676. I'll contact you confidentially.

EXPLORE MINNESOTA AND PRIMARY CARE with the North Memorial Medical Center primary care network. Opportunities in Family Practice, internal medicine and ob/gyn that allow security and stability without sacrificing autonomy. Single and multi-specialty groups in urban, suburban and semi-rural settings. Teaching opportunities with North/University of Minnesota residency program. Competitive compensation structures and flexible schedules with inde-

*More classifieds on next page.*



## CLASSIFIED ADVERTISEMENTS

pendent or hospital-owned group practices. Immediate access to Minneapolis/St. Paul attractions. Central to Minnesota's abundant lakes country. If you're BC/BE, send your CV or call in confidence: Mark Billmeyer, North Memorial Medical Center, 3300 Oakdale Ave. North, Robbinsdale, MN 55422; nationwide and Canada: 800-275-4790.

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**EMERGENCY MEDICINE OPPORTUNITIES.** Coastal Emergency Services, Kansas' largest provider of Emergency Physicians, has opportunities throughout the state in Emergency Departments of varying volume. Remuneration commensurate with volume and acuity. Groups claims made insurance procured on your behalf. Qualifications: BE/BC Primary Care Physicians with minimum 1500 hours in Emergency Department of similar volume. Call Mak Meyers or Brian Nunning for location and fees, 800-326-2782.

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**PACIFIC NORTHWEST AND ROCKY MOUNTAIN** locations. Opportunities in primary care, and other specialties. Urgent need for spring and summer. Benefits include malpractice, lodging and transportation. Assignments vary in duration. Temporary and/or permanent placement available. Call or write Ed Novelli at Interim Physicians, 4155 E. Jewell, #1018, Denver, CO 80222; 1-800-669-0718.

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**NEW ADDRESS OR PHONE NUMBER?** Be sure it's correct in the annual KMS Membership Directory, to be published in August. We need the information *now!* Please check your directory listing for accuracy and call Membership Secretary Ramona Perez at 1-800-332-0156 or 913-235-2383 if corrections are needed. Thank you!

### ATTENTION, KMS MEMBERS!

Please watch for the KANSAS MEDICINE survey in next month's issue. This will be your opportunity to let the editorial staff know what you like or don't like about the journal. We will appreciate your comments.

## CARDIOLOGY NOTES

*(Continued from page 180.)*

In the original GISSI (Italian) trial, there was no survival advantage to streptokinase alone vs. aspirin alone, and the additional advantage of streptokinase plus aspirin was similar to that of tPA over streptokinase reported in this study. Certainly, it was never argued that the additional expense of streptokinase over aspirin alone was unjustified.

Lipid-lowering drugs, which cost about \$600 per year in Wichita, have a smaller documented impact on survival than that reported here for tPA over streptokinase, yet the justification for this expense has received little discussion.

Finally, it is simplistic to focus on the cost of a single agent as determining the cost of caring for an acute myocardial infarction. In general, treatments which improve mortality also improve morbidity and reduce complications and recurrence. Usually, the morbidity advantage is a multiple of the mortality reduction. Whether this will occur with tPA is not known, but it seems time to leave the tPA vs. streptokinase debate and get on with discovering the best combination of agents and dosages required to open arteries and reduce strokes.

### REFERENCE

Presented at the Tri-Society Special Plenary Session of the American Federation of Clinical Researchers, Washington, D.C., April 1, 1993.

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## RESOLUTION 93-24

*(Continued from page 173.)*

Shawnee County Medical Society and the Shawnee County Medical Alliance for their time and efforts to make this 134th meeting such an outstanding success; and be it further

*Resolved,* That copies of this resolution be forwarded to the Shawnee County Medical Society and the Shawnee County Medical Alliance; and be it further

*Resolved,* That the delegates and members thank Dr. and Mrs. Meidinger for graciously opening their home to us and for being such excellent hosts; and be it further

*Resolved,* That a copy of this resolution be forwarded to Dr. and Mrs. Meidinger.

# Stroke-Free Survival After Infarction

DONALD L. VINE, M.D.,\* *Wichita*

**T**he GUSTO (Global Utilization of Streptokinase and tPA for Occluded Coronary Arteries) trial may have finally settled the question of which thrombolytic agent, tPA or streptokinase, is more effective for the treatment of acute myocardial infarction. The next debate may be whether or not the difference is sufficient to justify the cost.

## Protocol and Patients

The preliminary findings, released at a recent meeting in Washington, D.C., report the mortality, stroke rates and complications from a series of over 40,000 acute myocardial infarction patients randomly assigned to treatment with one of four protocols.

The first was weight-adjusted, front-loaded tPA plus therapeutic intravenous heparin infusion. The second was a reduced-dosage combination of tPA and streptokinase, also accompanied by intravenous heparin infusion. The last two protocols consisted of therapeutic doses of streptokinase plus either therapeutic intravenous heparin or subcutaneous heparin.

The average ages (61 to 62 years), number of patients over age 70 (11 to 13%), location of infarcts and Killip classification were similar for each of the four groups. There was no difference in the frequency of prior cerebral vascular disease among subgroups.

## Mortality

After 24 hours, mortality ranged between 2.3 and 2.9%, with a statistically significant advantage favoring tPA over any of the streptokinase protocols.

At 30 days follow-up, the mortality associated with the tPA protocol, 6.3%, was statistically superior to the mortality associated with the combination protocol, 7.0%, or with either of the streptokinase-plus-heparin protocols, 7.4 and 7.2%.

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TABLE I  
STROKE-FREE SURVIVAL

N	tPA 10,344	Combo 10,328	SK/Hiv 10,377	SK/Hsc 9,796	Total 40,845
No stroke	92.8%	92.1%	91.8%	92.1%	
Not disabling	93.1%	92.4%	92.1%	92.3%	
Statistical significance					
No stroke	p				
tPA vs SK/Hiv	0.005				
tPA vs SK/Hsc	0.04				
No disabling stroke					
tPA vs SK/Hiv	0.001				
tPA vs SK/Hsc	0.03				

Abbreviations: SK = streptokinase, Hiv = heparin iv, Hsc = Heparin subcu, tPA = tissue plasminogen activator

GUSTO 1993

## Strokes and Stroke-Free Survival

Unfortunately, acute myocardial infarction and its treatment with thrombolytic agents are associated with strokes. In the GUSTO trial, an excess stroke rate of two to three per 1,000 (1.55 for tPA vs. 1.4 for streptokinase plus intravenous heparin, and 1.22 for streptokinase plus subcutaneous heparin) complicates the interpretation of the survival advantage.

When stroke-free survival is considered, there remains a small, but statistically significant, advantage favoring treatment with tPA (see table).

In addition to a mortality advantage of approximately one percent favoring tPA, there were advantages in terms of artery patency at 90 minutes and likelihood of retaining normal left ventricular wall motion and end systolic volume.

## Comments

The difference in cost between tPA and streptokinase is now about \$1,900 per dose because the price of streptokinase has risen. Whether or not the one percent advantage of tPA over streptokinase justifies this expense will certainly be debated, but a couple of comparisons might be considered.

(Continued on page 179.)



**Reference:** 1. Jones PH, et al. Once-daily pravastatin in patients with primary hypercholesterolemia: a dose-response study. *Clin Cardiol.* 1991;14:146-151.

## **PRAVACHOL® (Pravastatin Sodium Tablets)**

### **CONTRAINDICATIONS**

Hypersensitivity to any component of this medication.

Active liver disease or unexplained, persistent elevations in liver function tests (see WARNINGS).

**Pregnancy and lactation.** Atherosclerosis is a chronic process and discontinuation of lipid-lowering drugs during pregnancy should have little impact on the outcome of long-term therapy of primary hypercholesterolemia. Cholesterol and other products of cholesterol biosynthesis are essential components for fetal development (including synthesis of steroids and cell membranes). Since HMG-CoA reductase inhibitors decrease cholesterol synthesis and possibly the synthesis of other biologically active substances derived from cholesterol, they may cause fetal harm when administered to pregnant women. Therefore, HMG-CoA reductase inhibitors are contraindicated during pregnancy and in nursing mothers. **Pravastatin should be administered to women of childbearing age only when such patients are highly unlikely to conceive and have been informed of the potential hazards.** If the patient becomes pregnant while taking this class of drug, therapy should be discontinued and the patient apprised of the potential hazard to the fetus.

### **WARNINGS**

**Liver Enzymes:** HMG-CoA reductase inhibitors, like some other lipid-lowering therapies, have been associated with biochemical abnormalities of liver function. Increases of serum transaminase (ALT, AST) values to more than 3 times the upper limit of normal occurring on 2 or more (not necessarily sequential) occasions have been reported in 1.3% of patients treated with pravastatin in the U.S. over an average period of 18 months. These abnormalities were not associated with cholestasis and did not appear to be related to treatment duration. In those patients in whom these abnormalities were believed to be related to pravastatin and who were discontinued from therapy, the transaminase levels usually fell to pretreatment levels. These biochemical findings are usually asymptomatic although worldwide experience indicates that anorexia, weakness, and/or abdominal pain may also be present in rare patients.

As with other lipid-lowering agents, liver function tests should be performed during therapy with pravastatin. Serum aminotransferases, including ALT (SGPT), should be monitored before treatment begins, every six weeks for the first three months, every eight weeks during the remainder of the first year, and periodically thereafter (e.g., at about six-month intervals). Special attention should be given to patients who develop increased transaminase levels. Liver function tests should be repeated to confirm an elevation and subsequently monitored at more frequent intervals. If increases in AST and ALT equal or exceed three times the upper limit of normal and persist, then therapy should be discontinued. Persistence of significant aminotransferase elevations following discontinuation of therapy may warrant consideration of liver biopsy.

Active liver disease or unexplained transaminase elevations are contraindications to the use of pravastatin (see CONTRAINDICATIONS). Caution should be exercised when pravastatin is administered to patients with a history of liver disease or heavy alcohol ingestion (see CLINICAL PHARMACOLOGY: Pharmacokinetics/Metabolism). Such patients should be closely monitored, started at the lower end of the recommended dosage range, and titrated to the desired therapeutic effect.

**Skeletal Muscle: Rhabdomyolysis with renal dysfunction secondary to myoglobinuria has been reported with pravastatin and other drugs in this class.** Uncomplicated myalgia has also been reported in pravastatin-treated patients (see ADVERSE REACTIONS). Myopathy, defined as muscle aching or muscle weakness in conjunction with increases in creatine phosphokinase (CPK) values to greater than 10 times the upper limit of normal was reported to be possibly due to pravastatin in only one patient in clinical trials (<0.1%). Myopathy should be considered in any patient with diffuse myalgias, muscle tenderness or weakness, and/or marked elevation of CPK. Patients should be advised to report promptly unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever. **Pravastatin therapy should be discontinued if markedly elevated CPK levels occur or myopathy is diagnosed or suspected. Pravastatin therapy should also be temporarily withheld in any patient experiencing an acute or serious condition predisposing to the development of renal failure secondary to rhabdomyolysis, e.g., sepsis, hypotension, major surgery, trauma, severe metabolic, endocrine, or electrolyte disorders, or uncontrolled epilepsy.**

The risk of myopathy during treatment with lovastatin is increased if therapy with either cyclosporine, gemfibrozil, erythromycin, or niacin is administered concurrently. There is no experience with the use of pravastatin together with cyclosporine. Myopathy has not been observed in clinical trials involving small numbers of patients who were treated with pravastatin together with niacin. One trial of limited size involving combined therapy with pravastatin and gemfibrozil showed a trend toward more frequent CPK elevations and patient withdrawals due to musculoskeletal symptoms in the group receiving combined treatment as compared with the groups receiving placebo, gemfibrozil, or pravastatin monotherapy. Myopathy was not reported in this trial (see PRECAUTIONS: Drug Interactions). One patient developed myopathy when clofibrate was added to a previously well tolerated regimen of pravastatin; the myopathy resolved when clofibrate therapy was stopped and pravastatin treatment continued. **The use of fibrates alone may occasionally be associated with myopathy. The combined use of pravastatin and fibrates should be avoided.**

### **PRECAUTIONS**

**General:** Pravastatin may elevate creatine phosphokinase and transaminase levels (see ADVERSE REACTIONS). This should be considered in the differential diagnosis of chest pain in a patient on therapy with pravastatin.

**Homozygous Familial Hypercholesterolemia.** Pravastatin has not been evaluated in patients with rare homozygous familial hypercholesterolemia. In this group of patients, it has been reported that HMG-CoA reductase inhibitors are less effective because the patients lack functional LDL receptors.

**Renal Insufficiency:** A single 20 mg oral dose of pravastatin was administered to 24 patients with varying degrees of renal impairment (as determined by creatinine clearance). No effect was observed on the pharmacokinetics of pravastatin or its 3 $\alpha$ -hydroxy isomeric metabolite (SQ 31,906). A small increase was seen in mean AUC values and half-life (t<sub>1/2</sub>) for the inactive enzymatic ring hydroxylation metabolite (SQ 31,945). Given this small sample size, the dosage administered, and the degree of individual variability, patients with renal impairment who are receiving pravastatin should be closely monitored.

**Information for Patients:** Patients should be advised to report promptly unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever.

**Drug Interactions:** Immunosuppressive Drugs, Gemfibrozil, Niacin (Nicotinic Acid), Erythromycin: See WARNINGS: Skeletal Muscle.

**Antipyrine:** Clearance by the cytochrome P450 system was unaltered by concomitant administration of pravastatin. Since pravastatin does not appear to induce hepatic drug-metabolizing enzymes, it is not expected that any significant interaction of pravastatin with other drugs (e.g., phenytoin, quinidine) metabolized by the cytochrome P450 system will occur.

**Cholestyramine/Colestipol:** Concomitant administration resulted in an approximately 40 to 50% decrease in the mean AUC of pravastatin. However, when pravastatin was administered 1 hour before or 4 hours after cholestyramine or 1 hour before colestipol and a standard meal, there was no clinically significant decrease in bioavailability or therapeutic effect. (See DOSAGE AND ADMINISTRATION: Concomitant Therapy.)

**Warfarin:** In a study involving 10 healthy male subjects given pravastatin and warfarin concomitantly for 6 days, bioavailability parameters at steady state for pravastatin (parent compound) were not altered. Pravastatin did not alter the plasma protein-binding of warfarin. Concomitant dosing did increase the AUC and C<sub>max</sub> of warfarin but did not produce any changes in its anticoagulant action (i.e., no increase was seen in mean prothrombin time after 6 days of concomitant therapy). However, bleeding and extreme prolongation of prothrombin time has been reported with another drug in this class. Patients receiving warfarin-type anticoagulants should have their prothrombin times closely monitored when pravastatin is initiated or the dosage of pravastatin is changed.

**Cimetidine:** The AUC<sub>0-12h</sub> for pravastatin when given with cimetidine was not significantly different from the AUC for pravastatin when given alone. A significant difference was observed between the AUC's for pravastatin when given with cimetidine compared to when administered with antacid.

**Digoxin:** In a crossover trial involving 18 healthy male subjects given pravastatin and digoxin concurrently for 9 days, the bioavailability parameters of digoxin were not affected. The AUC of pravastatin tended to increase, but the overall bioavailability of pravastatin plus its metabolites SQ 31,906 and SQ 31,945 was not altered.

**Gemfibrozil:** In a crossover study in 20 healthy male volunteers given concomitant single doses of pravastatin and gemfibrozil, there was a significant decrease in urinary excretion and protein binding of pravastatin. In addition, there was a significant increase in AUC, C<sub>max</sub>, and T<sub>1/2</sub> for the pravastatin metabolite SQ 31,906. Combination therapy with pravastatin and gemfibrozil is generally not recommended.

In interaction studies with aspirin, antacids [1 hour prior to PRAVACHOL (pravastatin sodium)], cimetidine, nicotinic acid, or probucol, no statistically significant differences in bioavailability were seen when PRAVACHOL was administered.

**Other Drugs:** During clinical trials, no noticeable drug interactions were reported when PRAVACHOL was added to: diuretics, antihypertensives, digitals, converting-enzyme inhibitors, calcium channel blockers, beta-blockers, or nitroglycerin.

**Endocrine Function:** HMG-CoA reductase inhibitors interfere with cholesterol synthesis and lower circulating cholesterol levels and, as such, might theoretically blunt adrenal or gonadal steroid hormone production. Results of clinical trials with pravastatin in males and post-menopausal females were inconsistent with regard to possible effects of the drug on basal steroid hormone levels. In a study of 21 males, the mean testosterone response to human chorionic gonadotropin was significantly reduced (p<0.004) after 16 weeks of treatment with 40 mg of pravastatin. However, the percentage of patients showing a  $\geq 50\%$  rise in plasma testosterone after human chorionic gonadotropin stimulation did not change significantly after therapy in these patients. The effects of HMG-CoA reductase inhibitors on spermatogenesis and fertility have not been studied in adequate numbers of patients. The effects, if any, of pravastatin on the pituitary-gonadal axis in pre-menopausal females are unknown. Patients treated with pravastatin who display clinical evidence of endocrine dysfunction should be evaluated appropriately. Caution should also be exercised if an HMG-CoA reductase inhibitor or other agent used to lower cholesterol levels is administered to patients also receiving other drugs (e.g., ketoconazole, spironolactone, cimetidine) that may diminish the levels or activity of steroid hormones.

**CNS Toxicity:** CNS vascular lesions, characterized by perivascular hemorrhage and edema and mononuclear cell

infiltration of perivascular spaces, were seen in dogs treated with pravastatin at a dose of 25 mg/kg/day, a dose that produced a plasma drug level about 50 times higher than the mean drug level in humans taking 40 mg/day. Similar CNS vascular lesions have been observed with several other drugs in this class.

A chemically similar drug in this class produced optic nerve degeneration (Wallerian degeneration of retinogeniculate fibers) in clinically normal dogs in a dose-dependent fashion starting at 60 mg/kg/day, a dose that produced mean plasma drug levels about 30 times higher than the mean drug level in humans taking the highest recommended dose (as measured by total enzyme inhibitory activity). This same drug also produced vestibulocochlear Wallerian-like degeneration and retinal ganglion cell chromatolysis in dogs treated for 14 weeks at 180 mg/kg/day, a dose which resulted in a mean plasma drug level similar to that seen with the 60 mg/kg dose.

**Carcinogenesis, Mutagenesis, Impairment of Fertility:** In a 2-year study in rats fed pravastatin at doses of 10, 30, or 100 mg/kg body weight, there was an increased incidence of hepatocellular carcinomas in males at the highest dose (p<0.01). Although rats were given up to 125 times the human dose (HD) on a mg/kg body weight basis, their serum drug levels were only 6 to 10 times higher than those measured in humans given 40 mg pravastatin as measured by AUC.

The oral administration of 10, 30, or 100 mg/kg (producing plasma drug levels approximately 0.5 to 5.0 times human drug levels at 40 mg) of pravastatin to mice for 22 months resulted in a statistically significant increase in the incidence of malignant lymphomas in treated females when all treatment groups were pooled and compared to controls (p<0.05). The incidence was not dose-related and male mice were not affected.

A chemically similar drug in this class was administered to mice for 72 weeks at 25, 100, and 400 mg/kg body weight, which resulted in mean serum drug levels approximately 3, 15, and 33 times higher than the mean human serum drug concentration (as total inhibitory activity) after a 40 mg oral dose. Liver carcinomas were significantly increased in high-dose females and mid- and high-dose males, with a maximum incidence of 90 percent in males. The incidence of adenomas of the liver was significantly increased in mid- and high-dose females. Drug treatment also significantly increased the incidence of lung adenomas in mid- and high-dose males and females. Adenomas of the eye Harderian gland (a gland of the eye of rodents) were significantly higher in high-dose mice than in controls.

No evidence of mutagenicity was observed in vitro, with or without rat-liver metabolic activation, in the following studies: microbial mutagen tests, using mutant strains of *Salmonella typhimurium* or *Escherichia coli*; a forward mutation assay in L5178Y TK +/– mouse lymphoma cells; a chromosomal aberration test in hamster cells; and a gene conversion assay using *Saccharomyces cerevisiae*. In addition, there was no evidence of mutagenicity in either a dominant lethal test in mice or a micronucleus test in mice.

In a study in rats, with daily doses up to 500 mg/kg, pravastatin did not produce any adverse effects on fertility or general reproductive performance. However, in a study with another HMG-CoA reductase inhibitor, there was decreased fertility in male rats treated for 34 weeks at 25 mg/kg body weight, although this effect was not observed in a subsequent fertility study when this same dose was administered for 11 weeks (the entire cycle of spermatogenesis, including epididymal maturation). In rats treated with this same reductase inhibitor at 180 mg/kg/day, seminiferous tubule degeneration (necrosis and loss of spermatogenic epithelium) was observed. Although not seen with pravastatin, two similar drugs in this class caused drug-related testicular atrophy, decreased spermatogenesis, spermatocytic degeneration, and giant cell formation in dogs. The clinical significance of these findings is unclear.

**Pregnancy: Pregnancy Category X:** See CONTRAINDICATIONS.

Safety in pregnant women has not been established. Pravastatin was not teratogenic in rats at doses up to 1000 mg/kg daily or in rabbits at doses of up to 50 mg/kg daily. These doses resulted in 20x (rabbit) or 240x (rat) the human exposure based on surface area (mg/meter<sup>2</sup>). However, in studies with another HMG-CoA reductase inhibitor, skeletal malformations were observed in rats and mice. PRAVACHOL (pravastatin sodium) should be administered to women of child-bearing potential only when such patients are highly unlikely to conceive and have been informed of the potential hazards. If the woman becomes pregnant while taking PRAVACHOL, it should be discontinued and the patient advised again as to the potential hazards to the fetus.

**Nursing Mothers:** A small amount of pravastatin is excreted in human breast milk. Because of the potential for serious adverse reactions in nursing infants, women taking PRAVACHOL should not nurse (see CONTRAINDICATIONS).

**Pediatric Use:** Safety and effectiveness in individuals less than 18 years old have not been established. Hence, treatment in patients less than 18 years old is not recommended at this time. (See also PRECAUTIONS: General.)

### **ADVERSE REACTIONS**

Pravastatin is generally well tolerated; adverse reactions have usually been mild and transient. In 4-month long placebo-controlled trials, 1.7% of pravastatin-treated patients and 1.2% of placebo-treated patients were discontinued from treatment because of adverse experiences attributed to study drug therapy; this difference was not statistically significant. In long-term studies, the most common reasons for discontinuation were asymptomatic serum transaminase increases and mild, non-specific gastrointestinal complaints. During clinical trials the overall incidence of adverse events in the elderly was not different from the incidence observed in younger patients.

**Adverse Clinical Events:** All adverse clinical events (regardless of attribution) reported in more than 2% of pravastatin-treated patients in the placebo-controlled trials are identified in the table below; also shown are the percentages of patients in whom these medical events were believed to be related or possibly related to the drug:

Body System/Event	All Events %		Events Attributed to Study Drug %	
	Pravastatin (N = 900)	Placebo (N = 411)	Pravastatin (N = 900)	Placebo (N = 411)
Cardiovascular				
Cardiac Chest Pain	4.0	3.4	0.1	0.0
Dermatologic				
Rash	4.0*	1.1	1.3	0.9
Gastrointestinal				
Nausea/Vomiting	7.3	7.1	2.9	3.4
Diarrhea	6.2	5.6	2.0	1.9
Abdominal Pain	5.4	6.9	2.0	3.9
Constipation	4.0	7.1	2.4	5.1
Flatulence	3.3	3.6	2.7	3.4
Heartburn	2.9	1.9	2.0	0.7
General				
Fatigue	3.8	3.4	1.9	1.0
Chest Pain	3.7	1.9	0.3	0.2
Influenza	2.4*	0.7	0.0	0.0
Musculoskeletal				
Localized Pain	10.0	9.0	1.4	1.5
Myalgia	2.7	1.0	0.6	0.0
Nervous System				
Headache	6.2	3.9	1.7*	0.2
Dizziness	3.3	3.2	1.0	0.5
Renal/Genitourinary				
Urinary Abnormality	2.4	2.9	0.7	1.2
Respiratory				
Common Cold	7.0	6.3	0.0	0.0
Rhinitis	4.0	4.1	0.1	0.0
Cough	2.6	1.7	0.1	0.0

\*Statistically significantly different from placebo.

The following effects have been reported with drugs in this class:

**Skeletal:** myopathy, rhabdomyolysis.

**Neurological:** dysfunction of certain cranial nerves (including alteration of taste, impairment of extra-ocular movement, facial paresis), tremor, vertigo, memory loss, paresthesia, peripheral neuropathy, peripheral nerve palsy.

**Hypersensitivity Reactions:** An apparent hypersensitivity syndrome has been reported rarely which has included one or more of the following features: anaphylaxis, angioedema, lupus erythematosus-like syndrome, polymyalgia rheumatica, vasculitis, purpura, thrombocytopenia, leukopenia, hemolytic anemia, positive ANA, ESR increase, arthritis, arthralgia, urticaria, asthenia, photosensitivity, fever, chills, flushing, malaise, dyspnea, toxic epidermal necrolysis, erythema multiforme, including Stevens-Johnson syndrome.

**Gastrointestinal:** pancreatitis, hepatitis, including chronic active hepatitis, cholestatic jaundice, fatty change in liver, and/or, rarely, cholestasis, fulminant hepatic necrosis, and hepatoma; anorexia, vomiting.

**Reproductive:** gynecomastia, loss of libido, erectile dysfunction.

**Eye:** progression of cataracts (lens opacities), ophthalmoplegia.

**Laboratory Test Abnormalities:** Increases in serum transaminase (ALT, AST) values and CPK have been observed (see WARNINGS).

Transient, asymptomatic eosinophilia has been reported. Eosinophil counts usually returned to normal despite continued therapy. Anemia, thrombocytopenia, and leukopenia have been reported with other HMG-CoA reductase inhibitors.

**Concomitant Therapy:** Pravastatin has been administered concurrently with cholestyramine, colestipol, nicotinic acid, probucol and gemfibrozil. Preliminary data suggest that the addition of either probucol or gemfibrozil to therapy with lovastatin or pravastatin is not associated with greater reduction in LDL-cholesterol than that achieved with lovastatin or pravastatin alone. No adverse reactions unique to the combination or in addition to those previously reported for each drug alone have been reported. Myopathy and rhabdomyolysis (with or without acute renal failure) have been reported when another HMG-CoA reductase inhibitor was used in combination with immunosuppressive drugs, gemfibrozil, erythromycin, or lipid-lowering doses of nicotinic acid. Concomitant therapy with HMG-CoA reductase inhibitors and these agents is generally not recommended. (See WARNINGS: Skeletal Muscle and PRECAUTIONS: Drug Interactions.)

### **OVERDOSAGE**

There have been no reports of overdoses with pravastatin.

Should an accidental overdose occur, treat symptomatically and institute supportive measures as required.



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Please see CONTRAINDICATIONS, WARNINGS, PRECAUTIONS, and ADVERSE REACTIONS in the brief summary of prescribing information on the adjacent page.



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# KANSAS MEDICINE

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08/24/93



- Hillary Rodham Clinton's AMA Address
- Liver Transplantation at KUMC
- Treatment of Human Glioblastoma
- Readership Survey



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## KANSAS MEDICINE SURVEY

Please complete this postpaid survey form, tear out, fold, staple and mail to KMS by August 15.  
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### I. Tell us how often you read the following departments of KANSAS MEDICINE:

1. Medicina et Lex (medico-legal commentary)

ALWAYS    5    4    3    2    1    NEVER

2. Auxiliary/Alliance News (Alliance president's message)

ALWAYS    5    4    3    2    1    NEVER

3. The Way It Was (excerpts from early KMS Proceedings)

ALWAYS    5    4    3    2    1    NEVER

4. Editorial Comment (the Editor's message)

ALWAYS    5    4    3    2    1    NEVER

5. News from KDHE (timely articles on the health of Kansans)

ALWAYS    5    4    3    2    1    NEVER

6. Cardiology Notes (what's new in cardiology)

ALWAYS    5    4    3    2    1    NEVER

7. Scientific Articles (the original purpose of the journal, emphasizing Kansas authors, cases, research, etc.)

ALWAYS    5    4    3    2    1    NEVER

8. Covers and Cover Stories (Kansas in pictorial form, with a brief essay)

ALWAYS    5    4    3    2    1    NEVER

9. Case of the Month (pathology reports from KUMC)

ALWAYS    5    4    3    2    1    NEVER

*(Continued on reverse)*

II. One of the primary issues under consideration is what format the journal will have in the future. In an effort to ensure that KMS publications are relevant, informative and user-friendly, the Long Range Planning Committee has been considering altering both the format and the content of the journal. For example, the committee is considering reducing the number of times the journal is published from monthly to quarterly, and combining the legislative bulletin and KMS newsletter into a newspaper format published the other eight months of the year. The emphasis would be on socioeconomic issues, the political scene, regulatory and legal matters. How do you feel about such a change?

\_\_\_\_ I support changing the journal's format, such as described above.

\_\_\_\_ I oppose changing the journal's format significantly.

\_\_\_\_ Other (please give us your suggestions).

III. What emphasis would you like to see in future issues of KANSAS MEDICINE? Please rank in descending order from high priority (1) to low priority (6).

\_\_\_\_ Scientific papers

\_\_\_\_ Medicolegal news

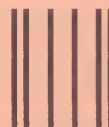
\_\_\_\_ Socioeconomic issues

\_\_\_\_ Political scene

\_\_\_\_ Profiles of individuals

\_\_\_\_ Other topics (please list)

IV. Additional views and suggestions on KANSAS MEDICINE:



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**ABOUT OUR LOGO**

In January 1935, a new logo appeared on the cover of KANSAS MEDICINE for the first time. This device represents two stethoscopes: the original monaural type as used by Laënnec, and the modern binaural variety. The logo was designed expressly for KANSAS MEDICINE by renowned graphic designer Bradbury Thompson, a native of Topeka and friend of two former editors of the journal, Dr. W.M. Mills and Dr. Lucien Pyle. As another former editor, Dr. Orville R. Clark, wrote in January 1955, the logo "has become as much a part of the journal as any of the features on the inside and is something which is ours alone."

**A**s we reflect this month on the 217th anniversary of our nation's founding and independence, it is good to remember the more distant past and the many things that have come to us from that time.

The native peoples who roamed these plains hunting the buffalo, on which their existence depended, provided many of our state's place names. The Kansa (also Kaw, Konza or Kanza), meaning "people of the south wind," gave us the names of our state and a major river. The Wichita, Wyandotte, Osage and Pawnee are also recognized in city and county names.

This month's cover illustration recalls an early visitor to present-day Kansas, the first white man to glimpse the prairies and the Great Plains. Francisco Vasquez de Coronado (1510-44) was a Spaniard who came to Mexico in 1535. In 1540 he, along with some 300 Spaniards and 100 Indians, began a quest for the "Seven Cities of Cibola" and "Gran Quivira," which were said to contain quantities of gold and gems. The expedition searched what are now Arizona and New Mexico without finding the treasure they desired. What they did find were Indian pueblos, whose value they did not recognize. In 1541 they continued their search, exploring what are now the panhandles of Texas and Oklahoma and venturing into Kansas, but again they were unsuccessful.

Coronado Heights, near Lindsborg (south of Salina), is said to mark their northernmost penetration into Kansas. The scene on the cover, Coronado's Cross, is near Fort Dodge, southeast of Dodge City. This marker commemorates Coronado's passage through Kansas. Although they failed as treasure seekers, Coronado and his men discovered the Continental Divide and the Grand Canyon of the Colorado. Ironically, they did bring some treasure with them: horses, which greatly increased the indigenous peoples' mobility and range, making them better hunters. The Spanish influence on Kansas is also felt in the Santa Fe Trail, which ran from Independence, Missouri, through our state to Santa Fe, New Mexico. This was the longest commercial route in pre-railroad days.

As we celebrate the present, let's not forget our history and the many things that link us to other peoples and other times. It is wise to remember the saying that those who forget the past are doomed to repeat it.

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# KANSAS MEDICINE

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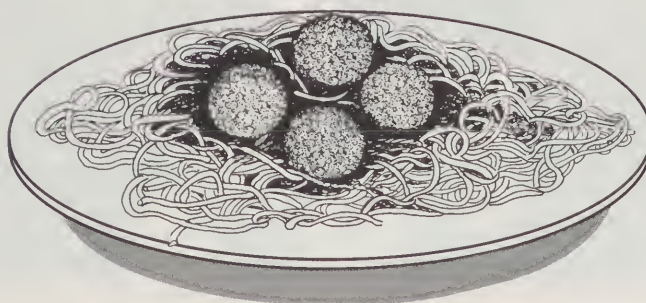
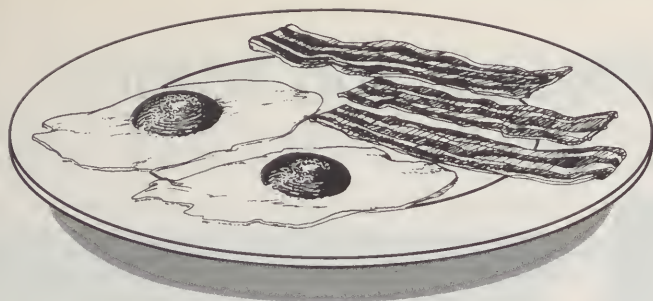
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# The Journal: Past, Present and Future

**W**ords seem inadequate to express fully the value and character of Dr. David E. Gray and what he brought to KANSAS MEDICINE (and its predecessor, the *Journal of the Kansas Medical Society*) during his 23 years as Editor and Chairman of the Editorial Board. Yet words were the medium through which he came into our lives with his Editorial Comments and the vehicle for his thoughts, wisdom, wit, common sense and dedication to medicine. We are all the richer in mind and spirit because of his efforts. His Editorial Board report at the annual House of Delegates was eagerly awaited for its oasis of humor.



It would not be unreasonable to say that, through Dr. Gray's dedication, determination, strength of character and wisdom, he *was* KANSAS MEDICINE, and the journal bore his strong imprint. It would also be fair to say that it will be impossible to replace what is irreplaceable, or attempt to duplicate what cannot be duplicated.

The future of KANSAS MEDICINE has been reviewed due to its decreased revenues (resulting in fewer pages published and hence fewer scientific articles), proposed changes in emphasis of subject matter and other factors. A few state medical journals have ceased publication, and three have gone to tabloid instead of magazine format. KANSAS MEDICINE has always resurfaced from the depths.

Several months ago, the Long Range Planning Committee was asked by Jerry Slaughter and Dr. Gray to review the journal's future. Dr. Gray's final Editorial Board report contained the observation that:

"there is a significant increase in the socioeconomic character of content as well as ancillary subjects in our journal and others. Some publications have gone exclusively to them. Various changes in format have been considered. . . . So it occurred to me that we might get a sense of direction if we would simply ask you to communicate your thoughts to us."

This issue of KANSAS MEDICINE contains a survey form that seeks your opinion about the various features in the journal. We also solicit your views on possible format changes and your sug-

gestions on what future course the journal should take. Your comments will be most helpful to the Editorial Board and the Long Range Planning Committee as they assess the situation.

KANSAS MEDICINE has served as a liaison between the state society and the individual practitioner to keep him or her informed on significant issues. Some means of communication must continue this function. It is vitally important that the house of medicine act in concert. We have seen on the local and national scenes that when medicine is divided on an issue it loses. We must resist every effort, by forces that would reduce quality of care and freedom of choice, to separate us by specialty or fee schedule, to involve us in turf battles, to set us at odds with other providers or other methods, resulting in a reduction of our input and power in the health care field. Let us not be a house divided.

Please tell us how to make the unified voice of Kansas physicians work for you. W.E.M.

*The survey appears opposite page 181. Don't forget to complete it and send it in!*

## ATTENTION, KMS MEMBERS!

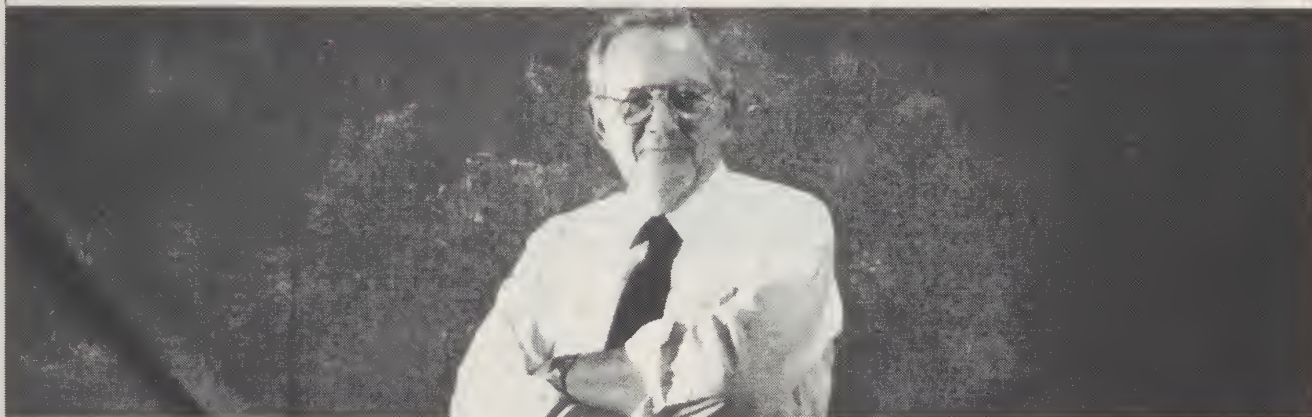
Please take a moment to check your current KMS Membership Directory listing for changes, errors or missing information.

To report such changes, please phone Ramona Perez, Membership Secretary, at 800-332-0156 or 913-235-2383 as soon as possible.

Thank you!



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# AMA Meeting Report

**I**n June the KMS delegation made its annual trek to the House of Delegates Meeting of the American Medical Association in Chicago. The meeting brought together 435 voting delegates representing state medical societies, medical students, residents, national medical specialty societies, and the armed services. (Kansas has 5 delegates.)



The amount of information to be read, analyzed and voted upon by delegates was staggering. Over 100 detailed reports and 250 resolutions covering every imaginable issue were considered during the five-day meeting. While there was vigorous debate on many topics, the issue on everyone's mind was health system reform.

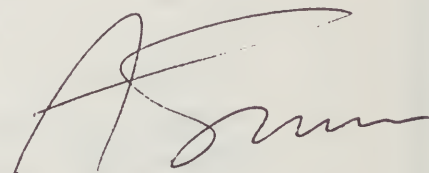
The AMA scored a major political coup when Hillary Rodham Clinton accepted their invitation to be the keynote speaker at the opening session of the House of Delegates. (Her speech is printed in its entirety beginning on page 191 of this journal.) The First Lady is an accomplished public speaker with a forceful, yet disarming, style. She pushed all the right buttons and was warmly received by a packed house of physicians, their spouses, a horde of reporters from all media, and others just eager for a glimpse at arguably the most powerful woman in America (or the world, for that matter). Her comments were short on specifics about the Clinton plan, now slated for release after Labor Day, and most everyone was cautious about reading too much into Mrs. Clinton's remarks, because as they say, "the devil's in the details."

There was quite a bit of discussion about the accelerating trend in many states towards the development of all kinds of provider networks. In many of the larger states insurance companies, hospitals and managed care systems are getting quite aggressive in their efforts to "capture" physicians, in order to be positioned for whatever happens in the way of health system reform. Several state medical societies are beginning to explore the development of statewide, physician-run networks as a means to "level the playing

field" and give physicians some control over their destiny. The KMS, in fact, is beginning serious consideration of forming a physician-run network for our state. You will be hearing more about the work of our task force by early fall.

The AMA takes a good deal of heat from all sides; some of it deserved, some not. It is criticized for being too conservative on some issues, too liberal on others. Its detractors point out that it represents only about 40% of the practicing physicians in America. Yet, despite its shortcomings, the AMA does quite a bit for the house of medicine in our country. I couldn't help being struck by the uniqueness and importance of having a place where all physicians, regardless of specialty, geography, or other factors, can come together and discuss the broad spectrum of issues of the day. I am quite certain that without the AMA's presence, politicians and planners would already have succeeded in chopping up the community of physicians into little pieces, rendering us powerless as a group.

As I wrote in this column last month, we must resist the tremendous pressures which would pull us apart. The key to a rational, patient-centered health care system is a vigorous, independent community of physicians, doing the best we can every day for our patients. It's something to think about.

A stylized, handwritten signature in dark ink, likely belonging to the author of the column.

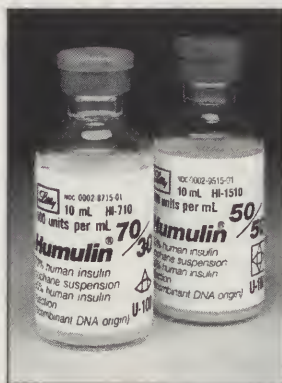





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# Termination of Contracts

WAYNE T. STRATTON, J.D.,\* *Topeka*

**I**n a decision of first impression for the Kansas courts (meaning there are no precedents in Kansas), the above question was answered in the negative. The Kansas Court of Appeals decision is subject to review by the state Supreme Court, if the upper court decides to accept the case. Whether further reviewed or not, the decision is of interest to those involved in hospital-physician contracts.



## Facts of the Case

The physician in this case was a radiologist who contracted with the hospital in August 1988. The contract was for 90 days, with the provision that if a new medical director had not been hired by the hospital within this time period, the agreement was to be automatically extended for a second 90-day period. A new medical director was timely hired, and the hospital directed a letter to the radiologist allowing her to continue to use the hospital facilities.

Apparently the medical director became dissatisfied with this arrangement and stated he would not continue it without an exclusive contract. This was accomplished, and the physician was notified that she would not be permitted to perform radiation oncology services at the hospital.

While there are several questions which were answered by the court, the most significant is the issue of whether the hospital bylaws obligated the hospital to offer her a hearing. The physician's argument was that the medical staff bylaws amount to a contract, and that her appointment could not be terminated without a due process hearing. The hospital argued that it had not modified the physician's privileges and that they were in full force. Further, the hospital believes it was entitled to deny the physician the use of the equipment in the radiation therapy department, and that this denial had nothing to do with the establishment of staff privileges or her right to a hearing.

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**Is a contracting physician entitled to a hearing if the contract is terminated for reasons other than competency?**

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The court found that the decision to ban the physician was not based upon quality of care issues, but rather on long-standing and sound business practices. The court further found that this did not deprive her of medical staff privileges "or her opportunity to exercise clinical privileges."

The court reviewed decisions from Virginia, Maryland and California upholding the hospital's right. The recently published Tennessee decision *Lewisburg Community Hosp. v. Alfredson* was distinguished since the St. Francis bylaws granted a hearing only in matters bearing on professional competency and conduct. This limitation was not found in the Lewisburg case. Further, the Lewisburg bylaws required the hospital to grant the use of certain facilities to physicians who had been granted clinical privileges in a particular specialty.

The court quoted from the Maryland decision:

It seems clear to us that this procedure presupposes notification to the practitioner that he has failed in his duties to the Hospital, his patients, or in the competent practice of medicine. Obviously a doctor faced with charges of this kind must be given a due process opportunity to defend himself. The case here at bar, however, does not fit into that category. . . . Appellees concede that the Hospital had a legal right to enter into an exclusive contract with Friedman and his professional association to provide the services required to implement the newly formed Department of Imaging. It necessarily follows that under these circumstances the Hospital had no obligation to grant privileges to radiologists who might compete with the Friedman Association.

Whether a hospital can, or should, be permitted to grant clinical privileges for economic reasons is an issue that is frequently debated. While that issue was not directly before the court, the procedural aspects of the matter were clarified. Whether the Supreme Court will modify the decision will be determined over the next few months.

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\*KMS Legal Counsel.





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# Our Year Lies Before Us Like a Gift

**D**ear Physicians of Kansas:

On my refrigerator door is a note which reads: "Each day should be unwrapped like a precious gift." This year lies ahead like a gift ready to be unwrapped, with challenges and expectations for the Kansas Medical Society and for the Alliance. There are many goals to work towards, many miles to travel and people to meet. I look forward to this time with excitement — and also with butterflies in my stomach!



We are now launched into a new year for medicine in Kansas. I enjoyed meeting many of you at the Annual Meeting of the KMS and the KMS Alliance in Topeka. At that event, there was a true feeling of camaraderie between our organizations. This is as it should be. Our entire mission is to support you in your efforts for Kansas medicine and to accomplish goals of our own toward that same end. I do think we need to strive continually for the feeling of togetherness which we experience at the annual meeting. We need to remember, especially in times of stress for the medical community, that we have each other for support and strength. "Strength in numbers" means we can do more together. The Alliance is a team of volunteers, already supportive of medicine, already ready to help you. You have been told before and I'll let you know again: we are your partners!

As you have become aware, the AMA Auxiliary, our national organization, became the AMA Alliance at the June convention in Chicago. In anticipation of this event, on May 1 we became the Kansas Medical Society Alliance. We hope you have a positive feeling about this name change and that in some way you sense we are even more in accord with you through our new image. Many people throughout the country, particularly our younger members, are more comfortable with this new name.

Summer activities for KMSA have included attendance at the June national convention in Chicago by some of our officers, as well as a workshop in Wichita on July 20. This latter event was a new one for us and included all county auxiliary/

alliance chairmen or officers who could attend. The purpose was to share ideas for health projects, membership and legislative affairs, and just to become better acquainted. It was planned with an emphasis on exchanging ideas. We have an abundance of talent throughout the state and would like to hear more members' ideas on how to better our efforts.

The next scheduled activity is our Fall Conference, to be held September 22 and 23 in Hays. This is our second board meeting of the year, and we encourage any physician's spouse in the state to attend. There will be informative programs, as well as business and fun. Please encourage your spouse to come to Hays for this event — it's really not *that* far from any place in Kansas. Believe me, I have already been on the road and tried it out! Detailed information about this meeting will be in your spouse's *Communiqué*, due to be mailed in late August. If your spouse does not receive the newsletter by early September, or has any questions about attending the meeting, please call me at 913-628-3003.

I am looking forward to traveling to Council meetings this year with Dr. Snow. He has asked me to attend with him, but because of the long distance to some areas, it may be difficult for me to go to every meeting. I do want to meet as many of you as possible, and I will try to be there as often as I can.

I will do my best representing KMSA this year. I hope to see many more of you and would enjoy talking with you about your Alliance as we unwrap our "gift" — this year.

*Cathy Wilcox*



# Remarks to the American Medical Association

HILLARY RODHAM CLINTON

*On June 13, First Lady Hillary Rodham Clinton addressed the House of Delegates at the AMA meeting in Chicago. The White House has supplied KANSAS MEDICINE with a transcript of her remarks, which follows.*

It is an honor for me to be with you at this meeting and to have the opportunity to participate with you in an ongoing conversation about our health care system and the kinds of constructive changes that we all wish to see brought to it.

I know that you have, through Health Access America, and through other activities and programs of the AMA, been deeply involved in this conversation already, and all of us are grateful for your contribution. I'm also pleased that you invited students from the Nathan Davis Elementary School to join us here this afternoon. [Applause.] I know that the AMA has a special relationship with this school, named as it is for the founder of the AMA, and that the AMA participates in its corporate capacity in the Adopt a School program here in Chicago. You have made a real contribution to these young men and women. And not only have you provided free immunizations and physicals and lectures and help about health and related matters, but you have served as role models and mentors. It is very important that all of us as adults do what we can to give young people the skills they will need to become responsible and successful adults. And I congratulate you for your efforts and welcome the students here today.

All of us respond to children. We want to nurture them so they can dream the dreams that free and healthy children should have. This is our primary responsibility as adults. And it is our primary responsibility as a government. We should stand behind families, teachers and others who work with the young, so that we can enable them to meet their own needs by becoming self-sufficient and responsible so that they, in turn, will be able to meet their families' and their own children's needs.

When I was growing up, not far from where

we are today, this seemed an easier task. There seemed to be more strong families. There seemed to be safer neighborhoods. There seemed to be an outlook of caring and cooperation among adults that stood for and behind children. I remember so well my father saying to me that if you get in trouble at school, you get in trouble at home — no questions asked — because there was this sense among the adult community that all of them, from my child's perspective, were involved in helping their own and others' children.

Much has changed since those days. We have lost some of the hope and optimism of that earlier time. Today, we too often meet our greatest challenges, whether it is the raising of children or reforming the health care system, with a sense that our problems have grown too large and unmanageable. And I don't need to tell you that kind of attitude begins to undermine one's sense of hope, optimism, and even competence.

We know now — and you know better than I — that over that last decade our health care system has been under extraordinary stress. It is one of the many institutions in our society that has experienced such stress. That stress has begun to break down many of the relationships that should stand at the core of the health care system. That breakdown has, in turn, undermined your profession in many ways, changing the nature of and the rewards of practicing medicine.

Most doctors and other health care professionals choose careers in health and medicine because they want to help people. But too often, because our system isn't working and we haven't taken full responsibility for fixing it, that motive is clouded by perceptions that doctors aren't the same as they used to be. They're not really doing what they used to do. They don't really care like

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**“My father was ill,  
and . . . before he died . . . I  
witnessed firsthand the  
courage and commitment of  
health care professionals.”**

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they once did.

You know and I know that we have to work harder to renew a trust in who doctors are and what doctors do. That is also not unique to the medical community. Just as our institutions across society are under attack and stress, all elements of those institutions are finding that they no longer can command the trust and respect, whether we talk of parents or government officials or other professionals — police officers, teachers — that should come with giving of themselves and doing a job well that needs to be done.

But focusing this afternoon on those concerns that are yours — what has happened with medicine, what is likely to happen — we need to start with a fundamental commitment to making the practice of medicine again a visible, honored link in our efforts to promote the common good. And the way to do that is to improve the entire system of which you are a part. We cannot create the atmosphere of trust and respect and professionalism that you deserve to have, and that many of you who are in this room remember from earlier years, without changing the incentives and the way the entire system operates. That has to be our primary commitment. If we do not put medicine and those who operate within medicine in the forefront of the respect they deserve to have, no matter what we do to the system on the margins will not make the differences that it should. [Applause.]

As you know, the President is in the process of finalizing his proposal for health care reform, and I am grateful to speak with you about that process and where it is today and where it is going. I had originally hoped to join you at your meeting in March in Washington, D.C. And I, again, want to apologize for my absence. I very much appreciated Vice President Gore attending for me, and I also appreciated the kind words from your executive officials on behalf of the entire association because of my absence.

My father was ill, and I spent several weeks with him in the hospital before he died. During his

hospitalization at St. Vincent's Hospital in Little Rock, Arkansas, I witnessed firsthand the courage and commitment of health care professionals, both directly and indirectly. I will always appreciate the sensitivity and the skills they showed, not just in caring for my father, not just in caring for his family — which, as you know, often needs as much care as the patient, but in caring for the many others whose names I will never know. I know that some of you worry about what the impact of health care reform will be on your profession and on your practice. Let me say from the start, if I read only what the newspapers have said about what we are doing in our plan, I'd probably be a little afraid myself, too, because it is very difficult to get out what is going on in such a complex process.

But the simple fact is this: The President has asked all of us, representatives of the AMA, of every other element of the health care system, as well as the administration, to work on making changes where they are needed, to keeping and improving those things that work, and to preserving and conserving the best parts of our system as we try to improve and change those that are not.

This system is not working as well as it did, or as well as it could — for you, for the private sector, for the public or for the nation. The one area that is so important to be understood on a macronational level is how our failure to deal with the health care system and its financial demands is at the center of our problems financially in Washington. Because we cannot control health care costs and become further and further behind in our efforts to do so, we find our economy, and particularly the federal budget, under increasing pressure.

Just as it would be irresponsible, therefore, to change what is working in the health care system, it is equally irresponsible for us not to fix what we know is no longer working. So let us start with some basic principles that are remarkably like the ones that you have adopted in your statements, and particularly in Health Access America. We must guarantee all Americans access to a comprehensive package of benefits, no matter where they work, where they live, or whether they have ever been sick before. If we do not reach universal access, we cannot deal with our other problems.

And that is a point that you understand that you have to help the rest of the country understand — that until we do provide security for every American when it comes to health care, we cannot fix what is wrong with the health care



system. Secondly, we do have to control costs. How we do that is one of the great challenges in this system, but one thing we can all agree on is that we have to cut down on the paperwork and reduce the bureaucracy in both the public and private sectors. [Applause.]

We also have to be sure that when we look at cost, we look at it not just from a financial perspective, but also from a human perspective. I remember sitting in the family waiting area of St. Vincent's, talking to a number of my physician friends who stopped by to see how we were doing. And one day, one of my friends told me that, every day, he discharges patients who need medication to stabilize a condition. And at least once a day, he knows there is a patient who will not be able to afford the prescription drugs he has prescribed, with the result that that patient may decide not to fill the prescription when the hospital supply runs out. Or that patient may decide that even though the doctor told him to take three pills a day, he'll just take one a day so it can be stretched further.

And even though St. Vincent's has created a fund to try to help support the needs of patients who cannot afford prescriptions, there's not

enough to go around, and so every day there is someone who my friend knows and you know will be back in the hospital because of their inability either to afford the care that is required after they leave, or because they try to cut corners on it, with the net result that then you and I will pay more for that person who is back in the hospital than we would have if we had taken a sensible approach toward what the real costs in the medical system are. That is why we will try, for example, to include prescription drugs in the comprehensive benefit package for all Americans, including those over 65, through Medicare. [Applause.]

We believe that if we help control costs up front, we will save costs on the back end. That is a principle that runs through our proposal and which each of you knows from firsthand experience is more likely to be efficient in both human and financial terms. We will also preserve what is best in the American health care system today.

We have looked at every other system in the world. We have tried to talk to every expert whom we can find to describe how any other country tries to provide health care. And we have concluded that what is needed is an American solu-

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tion for an American problem by creating an American health care system that works for America. [Applause.] And two of the principles that underlie that American solution are quality and choice. [Applause.]

We want to ensure and enhance quality. And in order to do that, we're going to have to make some changes, and you know that. We cannot, for example, promise to really achieve universal access if we do not expand our supply of primary care physicians, and we must do that. [Applause.] And you will have to help us determine the best way to go about achieving that goal.

I've spoken with representatives of our medical schools, and have talked about how the funding of graduate medical education will have to be changed to provide incentives for the training of more primary care physicians. [Applause.] I have talked with representatives of many of the associations, such as this one, about how continuing educational opportunities could help even mid-career physicians, once we have a real supply of primary care physicians who are adequately reimbursed and adequately supported . . . go back into primary care. [Applause.]

We have also very much put choice in the center of our system so that we will have not just choice for patients as to which plan they choose to join, but choice for physicians as to which plan they choose to practice with, including the option of being part of more than one plan at the same time. [Applause.]

Now, as we work out all of the details in the many proposals and parts that must come together, I am not suggesting that you will agree with every recommendation the President makes. I don't expect any group to do that. In fact, I suppose that if everybody's not a little put out that means we probably haven't done it right. But I do hope and expect that this group, as with other groups representing physicians and nurses and other health care professionals will find in this plan much to be applauded and supported. And I also believe that given the complexities of the problem we face, it would be difficult to arrive at a solution that was universally accepted.

But the reason I have confidence that this house, the AMA, and others will be supportive of the President's proposal is because we have benefitted so much from what you have already done and from the involvement of many of you and others around the country.

Again, contrary to what you may have heard, scores of practicing physicians served on the working groups that were studying health care

reform. I am deeply grateful on a personal level that members of the AMA's leadership spent invaluable time coming to meeting after meeting, day after day, sharing their ideas, reacting to ideas at the White House. And, of course, in the course of that we learned we had many common goals and objectives.

We will not only stand for universal coverage, but in addition the following: community rating so that we can assure all Americans they will be taken care of [applause]; eliminating restrictions based on preexisting conditions so that every American will be eligible [applause]; a nationally guaranteed comprehensive benefits package that will emphasize primary and preventive health care as well as hospitalization and other care [applause]; the kind of choice and quality assurances that we will need to have to make sure this new system not only operates well during the transition but gets a firm footing as it moves into the future, and we will therefore be emphasizing more on practice parameters and outcomes research so that you, too, can know better what works.

One of the great interesting experiences I have had during the past months as I've traveled around from state to state is having doctors coming up to me and telling me that they need more information; that all too often the information they receive doesn't come to them in forms that they believe are practical in their particular context. And what we want to do, by working with organizations like yours, is be sure that the quality outcomes and the kind of research that will be done will be readily available to every practicing physician in the country.

We also believe that it will be essential to continue medical research and to use the breakthroughs in medical research, again, not just to alleviate human suffering but to save money, because you know better than I that oftentimes a breakthrough in research — a new drug, a new procedure — is the quickest way to take care of the most people in a cost-effective manner. So we will continue to support medical research. [Applause.]

All of these principles arise from the same common assumption — that the status quo is unacceptable. And it is not really even any longer a status quo because we do not stand still; we drift backwards. Every month people lose their insurance; every month you have more micromanagement and regulation to put up with; every month our health care system becomes more expensive to fix.



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**"If I read only what the newspapers have said about what we are doing . . . I'd probably be a little afraid myself."**

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I know many of you feel that as doctors you are under siege in the current system. And I think there is cause for you to believe that, because we are witnessing a disturbing assault on the doctor-patient relationship. More and more employers are buying into managed care plans that force employees to choose from a specific pool of doctors. And too often, even when a doctor is willing to join a new plan to maintain his relationship with patients, he or she is frozen out.

What we want to see is a system in which the employer does not make the choice as to what plan is available for the employee; the employee makes that choice for him or herself. [Applause.] But if we do not change, and if the present pattern continues, as it will if we do not act quickly, the art of practicing medicine will be forever transformed. Gone will be the patient's treasured privilege to choose his or her doctor. Gone will be the close trusting bonds built up between physicians and patients over the years. Gone will be the security of knowing you can switch jobs and still visit your longtime internist or pediatrician or OB/GYN.

We cannot afford to let that happen. But the erosion of the doctor-patient relationship is only one piece of the problem. Another piece is the role that insurance companies have come to play and the role that the government has come to play along with them in second-guessing medical decisions.

I can understand how many of you must feel. When instead of being trusted for your expertise, you're expected to call an 800 number and get approval for even basic medical procedures from a total stranger. [Applause.]

Frankly, despite my best efforts of the last month to understand every aspect of the health care system, it is and remains a mystery to me how a person sitting at a computer in some air-conditioned office thousands of miles away can make a judgment about what should or shouldn't

happen at a patient's bedside in Illinois or Georgia or California. The result of this excessive oversight, this peering over all of your shoulders, is a system of backward incentives. It rewards providers for over-prescribing, over-testing, and generally overdoing. And worse, it punishes doctors who show proper restraint and exercise their professional judgment in ways that those sitting at the computers disagree with. [Applause.]

Dr. Bob Barrinson, one of the practicing physicians who spent hours and hours working with us while also maintaining his practice, told us recently of an experience that he had, one of many. He admitted an emergency room patient named Jeff. Jeff suffered from cirrhosis of the liver. Dr. Barrinson put him in the hospital and within 24 hours received a call from Jeff's insurance company. The insurance company wanted to know exactly how many days Jeff would be in the hospital and why. Dr. Barrinson replied that he couldn't predict the precise length of stay. A few days later the insurance company called back and questioned whether Jeff would need surgery. Again, Dr. Barrinson said he wasn't yet sure.

And what was Dr. Barrinson's reward for his honesty and his professionalism? He was placed on the insurance company's "special exceptions" list. You know, that's a list of troublesome doctors who make the insurance company wait a few days or a few weeks to determine the bottom line on a particular patient.

From that point on, the insurance company called Dr. Barrinson six times in two weeks. Each time he had to be summoned away from the patient to take the call. Each time he spoke to a different insurance company representative. Each time he repeated the same story. Each time his role as the physician was subverted. And each time the treatment of the patient was impeded.

Dr. Barrinson and you know that medicine, the art of healing, doesn't work like that. There is no master checklist that can be administered by some faceless bureaucrat that can tell you what you need to do on an hourly basis to take care of your patients; and frankly, I wouldn't want to be one of your patients if there were. [Applause.]

Now, adding to these difficulties, doctors and hospitals and nurses, particularly, are being buried under an avalanche of paperwork. There are mountains of forms, mountains of rules, mountains of hours spent on administrative minutiae instead of caring for the sick. Where, you might ask yourself, did all of this bureaucracy come from? And the short answer is, basically, everywhere.

There are forms to ensure appropriate care for the sick and the dying; forms to guard against unnecessary tests and procedures. And from each insurance company and government agency there are forms to record the decisions of doctors and nurses. I remember going to Boston and having a physician bring into a hearing I held there the stack of forms his office is required to fill out. And he held up a Medicare form and next to it he held up an insurance company form. And he said that they are the same forms that ask the same questions, but the insurance company form will not be accepted by the government, and the government form will not be accepted by the insurance company. The insurance company basically took the government form, changed the title to call it by its own name and requires them to have it filled out. That was the tip of the iceberg.

One nurse told me that she entered the profession because she wanted to care for people. She said that if she had wanted to be an accountant, she would have gone to work for an accounting company instead. [Laughter.] But she, like many other nurses and, as you know so well, many of the people in your offices now, are required to be bookkeepers and accountants, not clinicians, not caregivers. [Applause.]


The latest statistic I have seen is that for every

doctor a hospital hires, four new administrative staff are hired. [Applause.] And that in the average doctor's office 80 hours a month is now spent on administration. That is not time spent with a patient recovering from bypass surgery or with the child or teenager who needs a checkup and maybe a little extra TLC time of listening and counseling, and certainly not spent with a patient who has to run in quickly for some kind of emergency.

Blanketing an entire profession with rules aimed at catching those who are not living up to their professional standards does not improve quality. What we need is a new bargain. We need to remove from the vast majority of physicians these unnecessary, repetitive, often uneven forms and instead substitute for what they were attempting to do: more discipline, more peer review, more careful scrutiny of your colleagues. You are the ones who can tell better than I or better than some bureaucrat whether the quality of medicine that is being practiced in your clinic, in your hospital, is what you would want for yourself and your family. [Applause.]

Let us remove the kind of micromanagement and regulation that has not improved quality and has wasted billions of dollars. But then you have to help us substitute for it, a system that the pa-

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tients of this country, the public of this country, the decision-makers of this country can have confidence in. Now, I know there are legal obstacles for your being able to do that, and we are looking very closely at how we can remove those so that you can be part [applause] of creating a new solution in which everyone, including yourself, can believe.

In every private conversation I've had with a physician, whether it's someone I knew from St. Vincent's or someone I had just met, I have asked: Tell me, have you ever practiced with or around someone you did not think was living up to your standards? And invariably, the answer is: Well, yes, I remember in my training; well, yes, I remember this emergency room work I used to do; yes, I remember in the hospital when so-and-so had that problem. And I've said: Do you believe enough was done by the profession to deal with that problem and to eliminate it? And invariably, no matter who the doctor is, I've been told: No, I don't.

We want you to have the chance so that in the future you can say: Yes, I do believe we've been dealing with our problems. It is not something we should leave for the government, and certainly, we cannot leave it to the patients. That is the new kind of relationship I think we need to have.

Finally, if we do not, as I said earlier, provide universal coverage, we cannot do any of what I have just been speaking about because we cannot fulfill our basic commitment, you as physicians, us as a society, that we will care for one another. It should no longer be left to the individual doctor to decide to probe his conscience before determining whether to treat a needy patient. I cannot tell you what it is like for me to travel around to hear stories from doctors and patients that are right on point.

But the most poignant that I tell, because it struck me so personally, was of the woman with no insurance; working for a company in New Orleans; had worked there for a number of years; tried to take good care of herself; went for the annual physical every year; and I sat with her on a folding chair in the loading dock of her company along with others — all of whom were uninsured; all of whom had worked numbers of years — while she told me at her last physical her doctor had found a lump in her breast and referred her to a surgeon. And the surgeon told her that if she had insurance, he would have biopsied it but because she did not he would watch it.

I don't think you have to be a woman to feel what I felt when that woman told me that story. And I don't think you have to be a physician to

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feel what you felt when you heard that story. We need to create a system in which no one ever has to say that for good cause or bad, and no one has to hear it ever again. [Applause.]

If we move toward universal coverage, so therefore everyone has a payment stream behind them to be able to come into your office, to be able to come into the hospital, you will again be able to make decisions that should be made with clinical autonomy, with professional judgment. And we intend to try to give you the time and free you up from other conditions to be able to do that.

One specific issue I want to mention, because I feel strongly about it — if my husband had not asked me to do this, I would have felt strongly about it because of the impact in my state of Arkansas — we have to simplify and eliminate the burdensome regulations created under CLIA [applause], a well-intentioned law with many unintended consequences that have affected not only those of you in private practice but public health departments like ours in Arkansas around the country.

But again we need that new bargain. You have to help us know what should be eliminated so we then can just focus in on a very small part of this whole situation and eliminate the rest of the regulations that were thrown on top.

So those are the kinds of issues in which we think we can make it possible for you to practice in a more efficient, humane, better manner. We also believe strongly that we have to emphasize preventive care. And we have to provide a basic policy of preventive care. And we have to be sure that all of you and those who come after you into medicine are trained well in medical school to appreciate the importance of preventive care. [Applause.]

Much of what is now considered outside the scope of mainstream medicine is crowding in. Many of us in this room I know exercise, try to watch our diets, do things to try to remain healthier. And yet often medical education and medicine as it's practiced does not include those new common-sense approaches to health. We need to be a system that does not take care of the sick but instead promotes health wherever we can in whatever way we possibly can do it. [Applause.]

And finally, let me say that we will offer a serious proposal to curb malpractice problems for all of you. [Applause.] But let me add that it, too, must be part of this new contract. In order to do that and to do it in a way that engenders the confidence of the average American, we must have organized medicine standing ready to say we

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## Her appearance [at the AMA meeting] is testimony to her understanding of the critical role physicians will play if system reform is to succeed.

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James S. Todd, M.D.

AMA Executive Vice President

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will do a better job of taking care of the problems within us. [Applause.]

I have read or tried to read everything I can find about all of this. And you know as well as I do there are studies all over the field. It depends upon who writes it and who it's written for and the like. But we know there's a problem. We know we're going to deal with it. But one of the stark statistics from these studies is that all too often the largest number of malpractice suits is brought against the same physicians on a repetitive basis.

Now, it may be that for some that is an unfair accusation, and we need to deal with that through reform. But for others, you need to weed them out of your profession if they cannot practice to the quality that you expect your fellow colleagues to practice to. So we will propose serious malpractice reform, and we will have to look to you to help us make sure the problems that will still flow from people who should not be making decisions will be eliminated. That way we can give confidence back to you as a profession, that you will not be second-guessed or unfairly called into court. And we will give confidence to the public that they will be protected insofar as humanly possible. So that is what we will have to look for when we come forward with that. [Applause.]

Now, reaching consensus on all that should be done and putting it into a piece of legislation and moving it through the Congress is not going to be easy. There will be many groups that will nibble at the edges of it, not like the whole idea of it, want to continue the status quo. But if we do not have the courage to change now, if we do not move toward a system that once again gives you back your professionalism to practice prudent, practical, intelligent medicine again; if we do not move toward restoring the dignity to the doctor-patient relationship, and that encourages young people to become physicians because they want



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## She held out a hand in partnership.

Nancy W. Dickey, M.D.  
AMA Trustee

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to participate in that wonderful process of healing and caring, then the entire society, but most particularly medicine, will suffer.

The reason we are doing any of this is because of children like those who are here from Nathan Davis. Most of us in this room are at least halfway through. [Laughter.] And most of us in this room have sat in dozens and dozens of meetings just like this. We've sat and listened to people tell us what was wrong with health care, or with medicine, or with whatever, and we've talked about the problems at least seriously since the 1970s. And we've produced proposals like yours for Health Access America.

But while we have talked, our problems have gotten worse, and the frustration on the part of all of you and others has increased. Time and again, groups, individuals, and particularly the government, have walked up to trying to reform health care and then walked away.

There's enough blame to go around — every kind of political stripes can be included — but the point now is that we could have done something about health care reform 20 years ago and solved our problems for millions of dollars, and we walked away. Later we could have done something and solved our problems for hundreds of millions, and we walked away.

After 20 years with the rate of medical inflation going up and with all of the problems you know so well, it is a harder and more difficult solution that confronts us. But I believe that if one looks at what is at stake, we are not talking just about reforming the way we finance health care, we are not talking just about the particulars of how we deliver health care, we are talking about creating a new sense of community and caring in this country in which we once again value your contribution, value the dignity of all people.

How many more meetings do we need? How many alerts? How many more plans? How many more brochures? The time has come for all of us, not just with respect to health care, but with respect to all of the difficulties our country faces to stop walking away and to start stepping up and

taking responsibility. We are supposed to be the ones to lead for our children and our grandchildren. And the way we have behaved in the last years, we have run away and abdicated that responsibility. And at the core of the human experience is responsibility for children to leave them a better world than the one we found.

We can do that with health care. We can make a difference now that will be a legacy for all of you. We can once again give you the confidence to say to your grandsons and granddaughters, yes, do go into medicine; yes, it is the most rewarding profession there is.

So let's celebrate your profession by improving health care. Let's celebrate our children by reforming this system. Let's come together not as liberals or conservatives or Republicans or Democrats, but as Americans who want the best for their country and know we can no longer wait to get about the business of providing it. Thank you all very much.

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## Rural Primary Care Rotation Is Established at UKSM-W

**T**he University of Kansas School of Medicine has been awarded a three-year, \$196,718 grant by the Kansas Health Foundation to encourage internal medicine residents to establish practices in rural areas and to help them acquire the special clinical skills required of such physicians. Residents will be placed in rural communities for a two-month rotation, allowing them to experience the day-to-day activities characteristic of rural practice and the social attitudes that prevail in these settings. Garold O. Minns, M.D., is the Program Director.

The first Rural Primary Care Rotation will be established in Beloit. Craig Concannon, M.D., will serve as mentor for James Siler, M.D., the first resident assigned to the program.

Beloit has a population of approximately 4,000, several general and family practitioners, a surgeon and a regional medical center. Citizens in the town purchased and furnished a home near the hospital for the resident's family, and a fund has been established to pay for utilities and other living expenses.

The program began on July 1. Eventually it will be expanded to include other primary care residencies and additional communities.

# Treatment of Human Glioblastoma by Specific Immunotherapy

GARY W. WOOD, Ph.D.,\* FRANK P. HOLLADAY, M.D.,† THAIRA OWEITY, M.D.,\*  
AND ITARU WATANABE, M.D.‡

**A**strocytomas are the most common adult primary brain tumor. Grade III/IV astrocytomas or glioblastoma multiforme are extremely fast-growing and destructive. The average survival time for patients following surgery and radiation is 12 to 13 months. Chemical agents and biological response modifiers have little effect. The cancer's diffuse infiltrative nature and the relative inaccessibility of the brain to blood and lymph are barriers to surgical and cytotoxic treatments alike. Various humoral and cellular approaches to immunotherapy likewise have achieved little measurable success. However, several characteristics of the tumors make them an attractive theoretical target for immunotherapy. Gliomas rarely metastasize. Thus, elimination of the primary tumor could result in long-term survival. Also, the tumors arise in an immunologically privileged site where they would be expected to be inaccessible to immune surveillance. This means that brain tumors may be more immunogenic than other malignancies. Moreover, the extensive neovascularization that accompanies tumor progression allows blood-borne leukocytes to bypass the blood/brain barrier and enter the tumor. Since they have receptors for tumor-associated anti-

gens, activated T lymphocytes should selectively kill tumor cells and have minimal effects on normal brain tissue. Animal studies have established that specific T-cell-mediated immunotherapy is capable of rejecting progressing tumors in the brain.<sup>1,2</sup>

Studies with several different experimental tumors have established that tumor immunity is mediated by T lymphocytes, with the primary anti-tumor effects being performed by CD8+ T lymphocytes.<sup>3,4</sup> Currently, the most effective method for generating antigen-specific CD8+ T lymphocytes involves primary immunization *in vivo* with tumor cells and adjuvant followed by secondary activation of primed T cells with tumor cells *in vitro*.<sup>5</sup> That approach has been used to generate therapeutically effective immune cells in a variety of experimental tumor systems.<sup>6,7</sup> In each model system, intravenous adoptive transfer of immune cells to tumor-bearing animals produced immunologically specific rejection of progressing tumors. Recently, we demonstrated that specifically activated immune T lymphocytes could be generated by immunizing rats with a combination of irradiated brain tumor cells and the adjuvant, *C. parvum*, then restimulating primed cells with tumor cells *in vitro*.<sup>1,2</sup> When those cells were adoptively transferred to rats with rapidly progressing intracerebral tumors at a relatively late stage in tumor progression, the tumors were rejected. Those experiments were particularly important because they demonstrated experimentally that the blood/brain barrier was not an impediment to successful immunotherapy by cells introduced from the peripheral circulation.

Several fundamental experimental observations suggest that, if the immune system is manipulated appropriately, T cells have the potential to act against any type of human tumor as well, including brain tumors. One of those observations is that the multiple genetic changes that lead to malignant transformation are likely to make most malignancies immunogenic.<sup>8</sup> CD4+ and CD8+

\*Dept. of Pathology and Laboratory Medicine, KUMC.

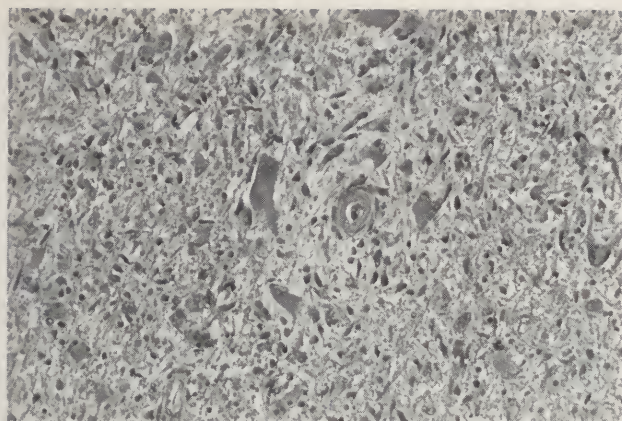
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Acknowledgments: We wish to thank the patient and his family for their willingness to cooperate with this pioneering investigation. Their patience and understanding are tremendously appreciated. We also are indebted to Dr. William Bayer and the Community Blood Center of Greater Kansas City and the Speas Foundation for their support in performing leukapheresis. We thank Dr. Masahiro Chiga (Dept. of Pathology, KUMC), Dr. Robert Morantz (Research Medical Center), Dr. Paul O'Boynick (Dept. of Surgery, Neurosurgery Div., KUMC), and Dr. Travis Soloman (VAMC of Kansas City) for their support. We are indebted to Teresa Turner-Heitz for her dedicated technical assistance.

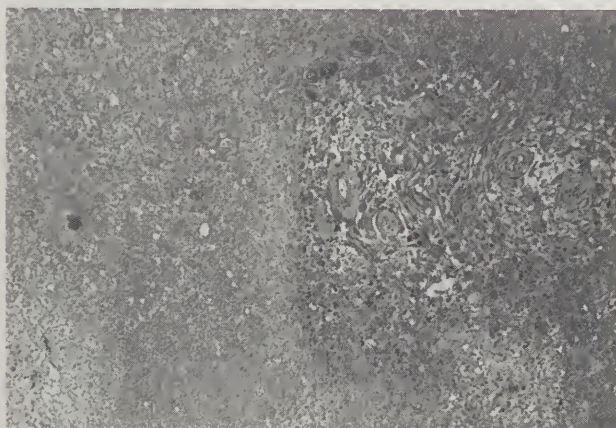




*Figure 1. Section taken from representative area of the original tumor. (Hematoxylin and eosin)*

T lymphocytes and macrophages infiltrate most tumors and are found in large numbers in human astrocytomas, suggesting that all vascularized areas of the tumor are accessible to T cells.<sup>9</sup> Specific cytotoxic T cell (CTL) clones have been derived from patients with various malignancies, including astrocytomas,<sup>10</sup> and from experimental animals immunized with brain tumor cells, showing that astrocytomas can be antigenic and can induce cell-mediated immune responses. Those observations raised the possibility that, if immune factors could be generated against astrocytoma-associated antigens, and if a sufficient quantity of immune cells could be delivered to the tumor site, an anti-tumor immune effect might be observed in humans.

We developed an immunotherapeutic approach for treating brain malignancy that is based on current general understanding of cancer immunology. Patients are selected who have recurrent grade III/IV astrocytoma. Tumors are re-



*Figure 2. Section taken from necrotic area of final tumor specimen. (Hematoxylin and eosin)*

sected to decrease the tumor burden, thereby reducing the number of cells that would have to be destroyed by immune cells. Patients are immunized with their own irradiated tumor cells plus the immunologic adjuvant, Bacillus Calmette-Guerin (BCG). The purpose of the immunization step is to induce an immune response against tumor-associated antigens. Immune responses generally do not occur during the natural progression of the tumor, because the tumor grows in an immunologically privileged site where it is shielded from the immune system. Patients then are leukapheresed to obtain peripheral blood mononuclear cells. The lymphocytes are stimulated with irradiated tumor cells and expanded in culture with interleukin 2 (IL-2). The purpose of this step is to activate large numbers of anti-tumor effector cells. The following is a description of the first case to be treated under this protocol.

### Case History

In December 1991, a 66-year-old male was diagnosed with a tumor in the right brain. A debulking operation was performed, and histopathologic analysis of the tumor revealed a glioblastoma multiforme with pleomorphic morphology consisting of numerous curled, elongated astrocytes, gemistocytes, bizarre large nucleated cells and multinucleated giant cells (Figure 1). The fast-growing nature of the tumor was suggested by large areas of tissue culture-like tumor cell proliferation and coagulative necrosis. After surgery, the patient was treated by both radiation and chemotherapy.

Four months after surgery, the patient was found unresponsive, and his clinical condition deteriorated progressively during the next few weeks. In April 1992, the patient's tumor again was debulked. The recurrent tumor was histopathologically similar to the original. Following surgery, the patient was tapered off steroids and immunized with a mixture of his own inactivated (irradiated) tumor cells and BCG in multiple sites in the axillae and groin. Inflammatory delayed-type hypersensitivity reactions developed at the injection sites and resolved over a period of weeks. Two weeks after immunization,  $5 \times 10^{10}$  white cells were isolated from the peripheral blood by leukapheresis. Leukapheresed cells were cultured with inactivated tumor cells and IL-2 (10 Cetus units/ml). Cultured cells were reinfused intravenously to the patient in July 1992. No further immunotherapy was performed. Subsequent treatment was confined to supportive care. Tu-





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Owen Brodie, MD, joined CompHealth's locum tenens medical staff in 1989, after 21 years in private practice. Since

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mor behavior was monitored monthly by computerized tomography (CT). Tumor regrowth first was detected in February 1993. The tumor grew progressively, and the patient died in April 1993.

Histopathologic analysis of the brain at autopsy revealed extensive involvement of the right parietal and occipital lobes and continuous infiltration of the posterior portion of the frontal lobe with tumor. The tumor originally had grown and was surgically removed from the deep white matter of the right parieto-occipital lobe. It recurred peripheral to the site of the original tumor and grew toward the frontal lobe. The original tumor site consisted primarily of extensive necrosis, which was likely to have been caused by the immunotherapy (Figure 2). The majority of the initial radiation- and chemotherapy-induced necrosis was removed during the debulking operation. When the tumor recurred following immunotherapy, it was histologically indistinguishable from the original tumor.

### Comment

Immunotherapy may have slowed tumor progression in this patient. Initial tumor growth was very rapid. Tumor recurrence was detected clinically four months after the initial combination of surgical debulking, radiation and chemotherapy. In contrast, the second tumor recurrence was not detected until eight months after the second surgical debulking. Glioblastomas generally grow back faster after second debulking operations. Studies with additional patients are ongoing.

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(Continued on page 206.)



# Orthotopic Liver Transplantation at KU Medical Center

JAMESON FORSTER, M.D.,\* AND ROMANO DELCORE, M.D.,\* *Kansas City*

Orthotopic liver transplantation (OLT) has become the treatment of choice for patients with end-stage liver disease (ESLD) who have failed medical management. Considered a therapy of last resort during the 1970s because of the immense technical tour de force the operation represented, the lack of adequate immunosuppression, and one-year survivals of only 30%, OLT became more widely accepted in the 1980s following the development of veno-venous bypass, which simplified patient management during the anhepatic phase; the addition of cyclosporine (CyA), which provided effective immunosuppression; and the improvement of one-year survivals to 70%. These developments could not have taken place without the pioneering efforts of Dr. Thomas Starzl in Denver and Pittsburgh<sup>1</sup> and of Dr. Roy Calne in Cambridge, England.<sup>2</sup>

In 1983, a National Institutes of Health (NIH) consensus conference found that OLT was a safe and effective treatment for ESLD due to extrahepatic biliary atresia in children, thus leading HCFA to cover such procedures in children under Medicare.<sup>3</sup> At that time, the procedure was considered to be experimental in adults and was not covered for reimbursement.<sup>3</sup> However, the number of OLTs performed in this country during the late 1980s rapidly increased, and transplant programs proliferated as experience with the technique demonstrated its marked success in all patients with liver disease as compared to standard therapies. By 1990, experience with this therapeutic modality in adult patients led to a second NIH consensus conference which concluded that OLT is a safe and effective therapy for ESLD secondary to primary biliary cirrhosis

(PBC), primary sclerosing cholangitis (PSC), post-necrotic cirrhosis (hepatitis B surface antigen negative), alcoholic cirrhosis,  $\alpha$ -1 anti-trypsin deficiency disease, Wilson's disease, and primary hemochromatosis.<sup>3</sup>

The development of the Liver Transplant Program (LTP) at the University of Kansas Medical Center (KUMC) was the result of the long-standing interest in transplantation by the Department of Surgery and similar long-standing interest in liver disease by the Department of Medicine, combined with the Kansas Legislature's desire to treat all Kansas residents within the state. The experience during the first two years of clinical activity of the LTP at KUMC is detailed in this article.

## Patients and Methods

*Patient demographics:* All patients who underwent OLT at KUMC between February 1990 and March 1992 were included. Survival data was accrued through May 1992. Thirty percent of the patients were women. The mean age at time of transplantation was 43 years (range 18 to 65 years). Twenty-one patients were Kansas residents and sixteen lived in Missouri. The etiologies of liver disease are listed in Table 1; the most common preoperative diagnoses were PSC and chronic active hepatitis C. Thirty-six patients had ESLD and one was transplanted for unresectable, primary hepatic carcinoma. Alcohol-related ESLD represented only 14% of the patients. Two patients had an unclear diagnosis; one case of fulminant hepatic failure was thought to be secondary to hepatitis A, but this agent was neither cultured nor stained from the liver, and one case of cirrhosis was called cryptogenic because there was no clear etiology.

The complications of ESLD which led to consideration for OLT varied depending on the etiology. Four patients, one with probable hepatitis A, two with autoimmune hepatitis, and one with PSC, developed rapid deterioration of hepatic function, requiring urgent transplantation. Of the other nine patients with PSC, seven developed

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This paper is dedicated to the Liver Transplant Programme, University of Toronto, and in particular to Dr. Paul Greig, Dr. Gary Levy, and Dr. Bernard Langer, without whose advice, interest and teaching, our program would have been impossible.

TABLE 1  
DIAGNOSES

<i>Liver Disease</i>	<i>Number of Patients</i>
Primary Sclerosing Cholangitis	10
Hepatitis C	10
Alcoholic End Stage Liver Disease	5
$\alpha$ -1 Antitrypsin Deficiency	3
Autoimmune Hepatitis	3
Primary Biliary Cirrhosis	2
Hepatitis B	1
Hepatocellular Carcinoma	1
Fulminant Hepatitis	1
Cryptogenic Cirrhosis	1

recurrent or intractable cholangitis, one was incapacitated with fatigue, and one had severe encephalopathy. The major indications for transplantation in the remaining 23 patients included upper gastrointestinal bleeding (7), encephalopathy (4), intractable ascites (4), SBP (3), incapacitating fatigue (2), intractable edema (2), and progressive severe hypoxia (hepatopulmonary syndrome) (1). Twenty-one of these patients had two or more indications.

Nineteen patients had undergone at least one previous abdominal operation including proximal splenorenal shunt (1), portacaval shunt (1), distal splenorenal shunt (1), exploratory laparotomy (1), open liver biopsy (1), colectomy and ileostomy for ulcerative colitis (1), hiatal hernia repair (1), cholechojejunostomy (1), cholecystectomy (9), and appendectomy (2).

**Pre-transplant evaluation:** All patients underwent extensive pre-transplant evaluation to determine the extent and etiology of their ESLD. Operative risk was carefully evaluated in each individual case. Abdominal ultrasound with doppler was routinely obtained to assess the patency of the portal system and hepatic vasculature; arteriography was reserved for those patients with an abnormal ultrasound study. Abdominal CT scans were obtained to exclude the possibility of hepatic neoplasia. One patient underwent exploratory laparotomy prior to transplantation in order to rule out local invasion and/or metastases of a primary hepatic carcinoma. Endoscopy was performed to rule out peptic ulcer disease. Pulmonary function tests, arterial blood gases, and 2-D echocardiograms were routinely utilized to evaluate cardiopulmonary reserve. Liver biopsy was routinely performed to confirm the diagnosis of ESLD. Consultations and complete evaluations by social workers, psychiatrists, and anesthesiolo-

gists were also obtained in every case. Upon completion of the work-up, patients were discussed at weekly LTP conferences and candidacy for OLT was determined. Recipient-donor selection was based on ABO blood type compatibility, size considerations, medical urgency, and length of time on the waiting list according to United Network for Organ Sharing (UNOS) guidelines.

**Operation:** Intraoperative anesthetic management of OLT at KUMC is reviewed in an accompanying article. Standard techniques for donor and recipient hepatectomy were used<sup>1</sup> and University of Wisconsin (UW) solution was utilized for preservation.<sup>4</sup> Duct-to-duct anastomosis was preferred, but a Roux-en-Y choledochojejunostomy was performed in nine patients with PSC, in one patient because of a small recipient duct and in one patient due to resection of the recipient duct for cancer.

**Immunosuppression:** Inductive immunotherapy with Minnesota Antilymphoblast Globulin (MALG) was begun immediately after the operation and continued for 7 to 10 days. Included with the MALG were tapering doses of solumedrol, which started at 100 mg intraoperatively. Near the end of the MALG regimen, CyA was added so that an adequate CyA level was achieved for two days prior to stopping the MALG. Patients were discharged on 0.3 mg/kg of prednisone and oral CyA. Imuran was added only if an episode of acute rejection occurred while on adequate prednisone and CyA therapy.

**Rejection:** An episode of rejection was defined by both clinical and histological criteria. Initial treatment included IV solumedrol pulses consisting of 500 mg, 400 mg and 400 mg on three successive days. Occasionally a second pulse was necessary. The monoclonal antibody OKT3 was reserved for the treatment of steroid-resistant rejection.

**Statistical methods:** Life tables, standard errors and log-rank analysis were calculated according to previously described methods.<sup>5</sup> Statistical significance for log rank analysis was based on a  $p < 0.05$ .

## Results

Thirty-seven patients received liver transplants during the first two years of clinical activity of the LTP at KUMC. The frequency of transplantation has gradually but progressively increased from one transplant in the first two months to three transplants per month during the last three months of the study period; 15 OLTs were per-



formed the first year and 22 during the second. Due to the continued efforts of the Midwest Organ Bank, the waiting period for a donor liver has been relatively short for a new program. After being activated on the UNOS list, patients waited for a mean of 22 days (range: 1 to 74 days) for a donor organ. Twenty-eight patients received organs from donors with identical blood types; nine patients received organs from donors with compatible, but not identical, blood types; five patients with A blood type received organs from O donors; three patients with B blood type received organs from O donors, and one patient with AB blood type received an organ from an A donor.

Of the 37 transplant patients, six (16%) died in the hospital. Three of these patients died intraoperatively. The cause of death in two patients was cardiac dysfunction; in one, it was probably secondary to a massive air embolus and in the other, it was secondary to a myocardial infarction. Both of these patients died prior to completion of the anastomoses while on veno-venous bypass. The third patient died from tonsillar cerebellar herniation occurring on completion of the anastomoses and removal of the veno-venous bypass. The other three patients died in the immediate post-operative period while in the ICU. Two of the three patients were rapidly deteriorating prior to transplantation, were transplanted emergently, and received donor organs with long cold ischemic times (>20 hrs). One of these two patients died after a cardiac arrest while on hemodialysis and the other developed progressive cerebral edema and intractable grand mal seizures. The third patient developed a pericardial tamponade within 24 hours of transplantation, followed by multiple-system organ failure and death.

The remaining 31 patients had mean ICU stays of 13 days (range 2 to 68 days; median 8 days). Following transplantation, seven patients had exploratory laparotomies; five for evacuation of infected fluid collections, one for evacuation of a hematoma and one for release of the T-tube. Two patients had second laparotomies, and one had a thoracotomy for lung biopsy. Post-operative complications were frequent and the majority of severe complications occurred during the ICU stay; only three patients had completely uneventful post-operative courses. No patients have died in-hospital following their ICU stay.

The mean length of hospital stay was 29 days, (range 10 to 78 days, median of 22 days). The mean overall hospital charge was \$118,000 (range \$34,000 to \$370,000, median \$94,000).

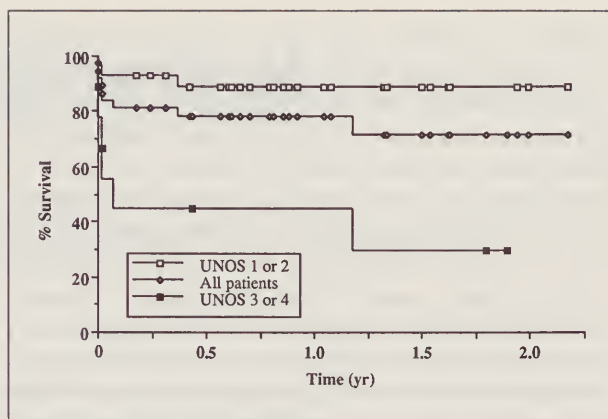


Figure 1. The actuarial survival of all patients who underwent OLT ( $n=37$ ) was 78% at one year and 72% at two years. Data points on the horizontal lines indicate the length of survival for living patients. A vertical line indicates one patient death; two or more deaths at the same time point are noted by one or more data points on a vertical line. Fourteen patients have lived more than one year. The patients who were UNOS status 1 or 2 ( $n=28$ ) had a significantly better one-year survival of 89%, versus those patients who were UNOS status 3 or 4 ( $n=9$ ) (44%).  $X^2=12.6$  ( $p < 0.005$ ).

Three patients died following hospital discharge; two with PSC from recurrent cholangiocarcinoma, and one from recurrent hepatitis B. Seventeen patients have required hospital readmission following their initial discharge.

Forty-five percent of the patients have suffered a rejection episode, and all first rejections occurred within the first 3 months following OLT. Additionally, the majority of the rejection episodes were successfully treated with steroid pulses. Only four patients required additional therapy for steroid-resistant rejection episodes. One of these patients had to be further treated with the experimental immunosuppressive drug FK 506.

The actuarial survival was 78% at one year and 72% at two years (Figure 1). However, patients who were out of hospital at the time of transplantation, UNOS status 1 or 2, ( $n=28$ ), had one-year survivals approaching 90%; whereas, those patients who were hospitalized and seriously ill at the time of transplantation, UNOS status 3 (hospital bound) or 4 (ICU bound), ( $n=9$ ), had a significantly lower one-year survival of 44%.

## Discussion

OLT is not only an effective treatment for the life-threatening complications of cirrhosis but is

curative in patients with ESLD because it replaces the damaged liver with a functional allograft. The initial problems that plagued the pioneering programs in Denver-Pittsburgh<sup>6</sup> and Cambridge<sup>7</sup> have been resolved, and the technique is now transferable to other medical centers throughout the world. Additionally, the development of the UW solution has allowed for extended cold ischemic times, greatly lengthening the distances over which donor organs can be transported.

In this country, the number of OLTs performed increased exponentially during the 1980s concomitant with the proliferation of new transplant programs. According to UNOS records, in 1990 there were 92 UNOS-approved liver transplant programs, and 2,529 liver transplants were performed. This expansion has been achieved while maintaining an overall patient survival of 74.5%, a rate that was inconceivable just 15 years ago.

With this expanded medical expertise, the question is no longer whether a liver transplant is possible for a patient with liver disease but, rather, where that patient goes to receive one. In Kansas, all patients previously had to travel long distances for their transplants. These patients and their families had prolonged waits away from home during evaluation, as well as during the post-transplant period. Once discharged, patients were committed to long-distance follow-up for the remainder of their lives. Furthermore, the donor organ pool available to these patients was not that of their home area, but rather that of their adopted transplant center. The waiting period for an organ is different depending on which center is chosen.

In an effort to address some of these issues for Kansas residents and patients from the neighboring regions, the Liver Transplant Program was established at KUMC. This report reviews the first two years of clinical activity and demonstrates a survival rate slightly better than the national mean: 78% overall and almost 90% in electively transplanted patients. Despite these encouraging survival figures, OLT remains a formidable operation, and complications are common. Reoperation is frequently required during the early post-operative period, and very few patients have a totally uneventful hospital course. Nevertheless, OLT is life-saving in a variety of irreversible acute and chronic liver diseases for which no satisfactory medical therapy exists, and Kansas residents can now seek the benefits of this therapy in their own state.

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## ANESTHETIC MANAGEMENT

(Continued from page 209.)

laboratory personnel and blood banks, this procedure offers a reasonable approach to patients in the treatment of end-stage liver disease.

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## HUMAN GLIOBLASTOMA

(Continued from page 202.)

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# The Anesthetic Management of Liver Transplantation

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**H**uman orthotopic liver transplantation (OLT) is one of the most complex and demanding operations performed in medicine today. The patient undergoing this procedure frequently has myriad problems that require careful evaluation and management. Despite these challenges, liver transplantation has become recognized as a viable method of treatment for patients with end-stage liver disease. Currently there are more than 70 centers in the United States at which liver transplantation is performed. This article will review the anesthetic management of the first 56 OLTs at Kansas University Medical Center. These transplants were performed on 35 males and 21 females from February 27, 1990, through May 8, 1993.

## Pathophysiology of Liver Failure

Since the liver is responsible for a variety of complex functions in the body, its failure heralds the onset of a wide range of problems. A reduction in liver synthetic function results in a decrease in the production of many proteins, including nearly all of the coagulation factors. Excretion of bilirubin and other metabolic products is reduced. Homeostasis of glucose, calcium and acid-base balance is also impaired. Decreased vascular tone and fluid retention lead to a hyperdynamic circulation. The presence of arteriovenous shunts produces hypoxemia and peripheral ischemia. Ascites may impair respiratory function by restricting the movement of the diaphragm. Portal hypertension can lead to esophageal varices and gastrointestinal bleeding. Congestion in the spleen causes platelet sequestration, further increasing bleeding tendencies. The development of hepatorenal syndrome or hepatic encephalopathy can further complicate the patient's condition.

A variety of conditions may lead to the development of end-stage liver disease and the necessity

for transplantation. The diagnoses of the first 56 transplant patients at KUMC are listed in Table 1. The average age of these patients was 42.3 years (range: 18–64 years).

## Surgical Procedure

The technique for human orthotopic liver transplantation was developed and reported by Starzl and colleagues in 1963.<sup>1</sup> The procedure is divided into three stages: pre-anhepatic, anhepatic and neohepatic. During the pre-anhepatic stage, the diseased liver is dissected from its attachments in the abdomen. The inferior vena cava, portal vein, hepatic artery and bile duct are identified and isolated. When the liver is removed, the supra- and infra-hepatic vena cava must be cross-clamped, interrupting normal venous return to the heart. A veno-venous bypass system is used to divert venous blood from the abdomen and lower extremities back to the heart. This is accomplished by placing cannulas in the femoral and portal veins, directing their blood flow to a pump, and returning the blood via a cannula to the axillary vein. By using heparin-bonded tubing and a centrifugal pump, no anticoagulation is required for this system. The use of this veno-venous bypass system greatly reduces blood loss and aids in maintaining hemodynamic stability.<sup>2</sup>

The anhepatic stage begins when the inferior vena cava is cross-clamped and the diseased liver is removed from the abdomen. During this stage

TABLE 1  
INDICATIONS FOR TRANSPLANT

<i>Indication</i>	<i>Number</i>
Chronic Active Hepatitis	15
Primary Sclerosing Cholangitis	14
Alpha-1-Antitrypsin Deficiency	5
Alcoholic Cirrhosis	5
Primary Biliary Cirrhosis	4
Autoimmune Cirrhosis	3
Fulminant Hepatic Failure	3
Cryptogenic Cirrhosis	3
Other	4

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TABLE 2  
DURATION OF TRANSPLANT PROCEDURES

Group	Time (minutes)	
	Mean	Range
Operating Room	769	525-1155
Surgical Time	633	385-1020
Anhepatic Stage	113	60-250

the donor liver will be placed in the abdomen and the inferior vena cava and portal vein anastomosis performed. Once these anastomoses are completed, the cross-clamps are removed and blood flow is resumed through the liver (via the portal vein) and the vena cava. The veno-venous bypass is terminated and the neohepatic stage begins. During this stage anastomosis of the hepatic artery is performed and bile drainage accomplished. Because the procedure of OLT involves many complicated steps, it is a time-consuming operation. Table 2 summarizes the operating room times for the first 56 patients who underwent OLT at KUMC. In addition to the long duration of this procedure, time limits of organ preservation frequently mandate that the transplant be performed outside the normal operating room hours of 0800-1700, Monday through Friday. Of the first 56 transplants performed at KUMC, 80% were begun outside of these normal hours.

### Preoperative Assessment

The preoperative assessment of candidates for OLT involves many specialists. Hepatologists and surgeons evaluate the degree of liver failure in these patients, in order to decide whether or not they need OLT. The preoperative assessment of the anesthesiologist, however, focuses less on the patient's liver dysfunction and more on the cardiac, pulmonary and renal status. Since this procedure may involve large fluid shifts, major blood loss, myocardial depression and impaired renal perfusion, the anesthesiologist carefully evaluates these patients to determine if their reserves in cardiac, pulmonary and renal function can withstand the stress of OLT. If there are questions as to the ability of these organ systems to tolerate OLT, further workup and tests are performed.

### Anesthetic Management

When the patient arrives in the operating room, a 16-gauge peripheral IV and a 20-gauge arterial line are inserted. Equipment for monitoring, consisting of ECG, blood pressure, pulse oximetry,

end-tidal carbon dioxide and FIO<sub>2</sub>, is utilized prior to the induction of anesthesia. After preoxygenation with 100% oxygen, induction of anesthesia is performed with thiopental or etomidate and succinylcholine. A rapid-sequence induction with cricoid pressure is used to reduce the possibility of aspiration of gastric contents. The anesthetic is maintained with isoflurane in oxygen or an air-oxygen mixture. Muscle relaxants and narcotics are administered as needed to supplement this technique.

A second arterial line is placed to serve as a port for the frequent laboratory sampling that takes place during the procedure. The right internal jugular vein is cannulated with an 8.5-F sheath, and an oximetric pulmonary artery catheter is inserted to measure cardiac output, filling pressure and mixed venous oxygen saturation. Two additional 8.5-F infusion catheters are placed either in the arm, external jugular veins, left internal jugular vein or subclavian veins to serve as volume infusion lines.

The initial hemodynamic parameters of the first 30 patients undergoing OLT at KUMC are typical of patients in liver failure. They tend to have a mild tachycardia (90 beats per minute), with normal blood pressure (124/65 mmHg), central venous pressure (8 mmHg) and pulmonary capillary wedge pressure (12 mmHg). The hyperdynamic nature of their circulation is reflected in a high cardiac output (9.8 l/minute) and low systemic vascular resistance (610 dynes/sec cm<sup>-5</sup>).

Since the procedure of OLT may result in massive blood loss, a system must be available that can rapidly infuse large volumes of blood and fluid. This is achieved by using the Rapid Infusion System (RIS), manufactured by Haemonetics Corp. of Braintree, Massachusetts. This device consists of a large mixing reservoir, heat exchanger, roller pump and air detectors. The RIS,

TABLE 3  
BLOOD COMPONENT USAGE DURING LIVER TRANSPLANTATION (56 PATIENTS)

Component	Number of Units	
	Mean	Range
Banked Blood	9.6	0-57
Cell Saver	17.6	0-177
Fresh Frzn		
Plasma	7.9	0-41
Platelets	18.7	0-121
Cryoprecipitate	7.4	0-70



when connected to the two 8.5-F venous infusion catheters, is capable of delivering warmed blood to the patient at rates of up to 1500 cc/min. This capacity is necessary, since blood loss during OLT may exceed 200 liters.<sup>3</sup> The blood component usage during our first 56 OLTs is shown in Table 3. In our experience, by utilizing a blood scavenging device (BRAT, COBE Laboratories, Lakewood, Colorado) we have been able to reduce the use of banked blood by 63%. However, despite careful surgical technique and attention to blood scavenging, an efficient blood bank is essential to the success of this procedure.

Poor liver function combined with massive blood loss and transfusion during surgery can result in a marked coagulopathy. In addition to employing standard laboratory tests including platelet count, prothrombin time and activated partial thromboplastin time, we have found it extremely helpful to utilize two newer methods to evaluate blood coagulation. These tests, the Sonoclot (Sienco Inc., Morrison, Colorado) and Thrombelastogram (Haemoscope Corp., Morton Grove, Illinois), are dynamic measures of whole blood coagulation. They offer the advantage of giving a rapid assessment of the entire coagulation process, which includes the interaction of coagulation proteins and platelets. The Thrombelastogram is also useful in identifying primary fibrinolysis which frequently occurs during OLT. In our series of 56 patients, 32% have demonstrated evidence of primary fibrinolysis and required treatment with epsilon-amino-caproic acid.

During the anhepatic stage, patients frequently develop hypocalcemia. This is caused by a buildup of citrate used as an anticoagulant in the transfused blood. The excess citrate binds calcium, leading to hypocalcemia, with the potential for hemodynamic instability and impaired coagulation. For this reason, frequent laboratory analysis of ionized calcium is mandatory during OLT. When these levels are low, calcium infusions are used to return the values to normal.

Perhaps the most critical point during OLT is at the end of the anhepatic stage, when the donor liver is reperfused. Frequently when the vascular cross-clamps are removed from the vena cava and portal vein and blood flow is restored to the donor liver, a period of hemodynamic instability occurs. This situation, known as post-reperfusion syndrome (PRS), is characterized by hypotension, cardiac failure and dysrhythmias.<sup>4</sup> Although the exact mechanism of PRS has not been identified,

it is believed that washout of preservative solution, ischemic metabolites and air embolism all contribute to the hemodynamic deterioration. With inotropic support, volume infusion and resuscitation drugs, recovery from this phase usually occurs within a period of 5 to 15 minutes. The primary concerns at the end of the procedure are to correct any residual coagulopathy and maintain good pulmonary and renal function. After recovery from PRS, hemodynamic stability is usually achieved by the completion of the operation.

### **Postoperative Course**

Following surgery these patients are carefully monitored in the intensive care unit. Until the transplanted liver regains full function, the patient's ability to synthesize coagulation proteins and maintain acid-base balance is impaired. Optimization of cardiac, pulmonary and renal function is sought to aid in the patient's recovery. Immunosuppression is started immediately to reduce the potential for rejection, but must be balanced against the possibility of postoperative infections. Typically these patients are maintained on a ventilator for the first 24 hours after surgery before extubation is attempted. Despite the magnitude of OLT, the requirement for large doses of narcotic analgesics has not been necessary. This may be due to the neurologic changes occurring in liver failure that render these patients more sensitive to sedative-narcotic medications. In addition, until liver function has returned to normal, the patient's ability to metabolize and excrete drugs is reduced.

### **Conclusion**

Patients undergoing OLT present many challenges to the anesthesiologist. Preoperative planning, extensive intraoperative monitoring and rapid laboratory assessment are essential in providing the necessary information to manage these patients. Expertise in addressing hemodynamic, metabolic and coagulation abnormalities is required in order to achieve a successful outcome. The liver transplant program at the Kansas University Medical Center has performed 56 OLTs in the period from February 27, 1990 through May 8, 1993. Currently 44 of the 56 patients are alive (78.6% survival).

With careful organization of the transplant team, identification of potential problems during the procedure and support from hepatologists,

*(Continued on page 206.)*

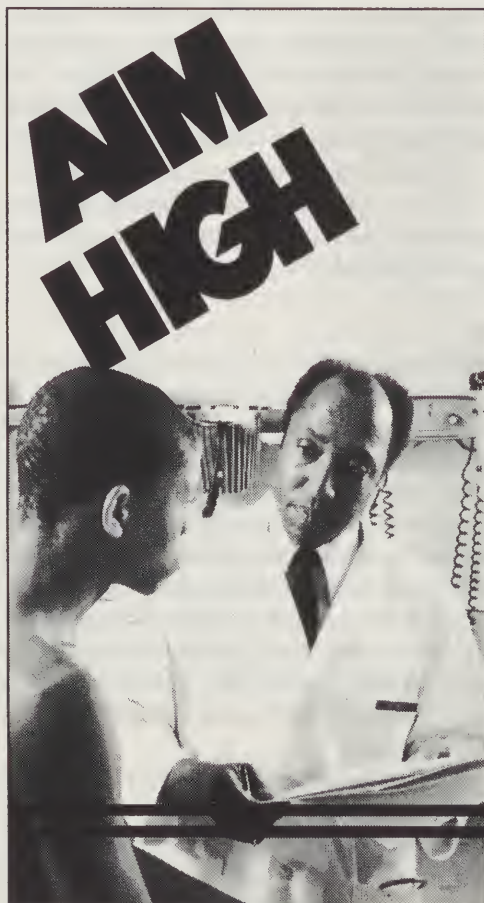
# Revised List of Reportable Diseases

**O**n April 19, 1993, the list of notifiable diseases in Kansas was revised. Reporting of these diseases is required by K.A.R. 28-1-2 for physicians, physicians' assistants and certain other professionals. The revised list brings Kansas into compliance with national reporting requirements.

Additional information may be obtained from local health departments or by calling the Bureau of Disease Control at (913) 296-5586.

## REPORTABLE DISEASES IN KANSAS

- |                                     |   |
|-------------------------------------|---|
| 1. AIDS/HIV                         | 14. Gonorrhea                                       |
| 2. Amebiasis                        | 15. Granuloma inguinale                             |
| 3. Anthrax                          | 16. Hepatitis, viral                                |
| 4. Botulism                         | 17. Legionellosis                                   |
| 5. Brucellosis                      | 18. Leprosy (Hansen's disease)                      |
| 6. Campylobacteriosis               | 19. Leptospirosis                                   |
| 7. Chancroid                        | 20. Lyme disease                                    |
| 8. Chickenpox (varicella)           | 21. Lymphogranuloma venereum                        |
| 9. Chlamydia, including psittacosis | 22. Malaria   |
| 10. Cholera                         | 23. Measles (rubeola)                               |
| 11. Diphtheria                      | 24. Meningitis                                      |
| 12. Encephalitis, infectious        | 25. Mumps   |
| 13. Giardiasis                      | 26. Pertussis (whooping cough)                      |
|                                     | 27. Plague  |
|                                     | 28. Poliomyelitis                                   |
|                                     | 29. Rabies  |
|                                     | 30. Rheumatic fever                                 |
|                                     | 31. Rocky Mountain spotted fever                    |
|                                     | 32. Rubella, including congenital rubella syndrome  |
|                                     | 33. Salmonellosis, including typhoid fever          |
|                                     | 34. Shigellosis                                     |
|                                     | 35. Syphilis, including congenital syphilis         |
|                                     | 36. Tetanus   |
|                                     | 37. Toxic shock syndrome                            |
|                                     | 38. Trichinosis                                     |
|                                     | 39. Tuberculosis                                    |
|                                     | 40. Tularemia                                       |
|                                     | 41. Typhus, murine                                  |
|                                     | 42. Urethritis, other than gonococcal or chlamydial |
|                                     | 43. Vaginitis, non-specific                         |
|                                     | 44. Yellow Fever                                    |



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### CARDIOLOGY NOTES

*(Continued from page 212.)*

#### REFERENCES

1. Woods KL, et al. Intravenous magnesium sulfate in suspected acute myocardial infarction: results of the second Leicester Intravenous Magnesium Intervention Trial (LIM-IT-2). *Lancet* 1992;339:1553.
2. Teo KK, et al. Effects of intravenous magnesium in suspected acute myocardial infarction: overview of randomized trials. *BMJ* 1991;303:1499.
3. Homer SM. Efficacy of intravenous magnesium in acute myocardial infarction in reducing arrhythmias and mortality. *Circulation* 1992;86:774.

# Magnesium for Myocardial Infarction

DONALD L. VINE, M.D.,\* *Wichita*

**M**agnesium seems too good to be true. Recent meta-analyses<sup>2,3</sup> and a relatively large randomized trial<sup>1</sup> support the value of magnesium in the initial management of acute myocardial infarction.

Early observations suggested a lower mortality following acute myocardial infarction in regions where the magnesium content of soil and water was high. Among patients who die of ischemic heart disease, data suggest that mortality may be higher among those with lower serum concentrations of magnesium.

Effects of magnesium that might be beneficial for patients during a myocardial infarction include reduction in arrhythmias, systemic and coronary vasodilatation, decreased platelet aggregation, and protection against catecholamine-induced myocardial necrosis.

More than 2,000 patients with clinical diagnosis of acute myocardial infarction within the preceding 24 hours were randomized to receive magnesium or placebo. Magnesium sulfate, 8 mmol over five minutes and 65 mmol over the subsequent 24 hours, was administered intravenously to 1,159 patients and placebo to 1,157. The primary endpoint was 28-day mortality.

Acute myocardial infarction was confirmed in 65% of patients (the ECG was not required for initial diagnosis and entry). Thrombolytic drugs were given to 36% of the magnesium group and 35% of the placebo group.

The 28-day mortality was 7.8% for magnesium-treated patients versus 10.3% for placebo (2p = 0.04). The major benefit was seen within the first 72 hours. Preliminary observations suggested that the benefit was greater for patients over 70 years than for younger patients.

Secondary endpoints which favored magnesium administration included less congestive heart failure and lower use of loop diuretics.

Side effects included flushing and transient mild blood pressure fall. There were no significant adverse reactions.

Two reviews published prior to the LIMIT-2 trial document the results of an additional eight randomized trials of magnesium for acute myocardial infarction. The table summarizes the data

from these eight and the LIMIT-2 investigation.

In every study save one, fewer patients died when treated with magnesium than without. These observations are statistically significant for the eight-trial pooled data and the LIMIT-2 study.

Overall, when compared to placebo, the mortality for patients receiving magnesium is reduced by about 3% for the aggregated data and 2.5% for the LIMIT-2 data. There is good reason to believe that this improvement is additive to the benefits of thrombolysis.

Serum magnesium concentrations at the end of the 24-hour infusion were  $1.55 \pm 0.44$  mmol/l for magnesium-treated patients and  $0.82 \pm 0.10$  mmol/l for controls. Clinically, this means that treated patients with a value three SDs above the mean reported for this study, i.e., 2.87 mmol/l, are still likely to be well below the serum levels associated with clinically important neuromuscular blockade (4 to 5 mmol/l).

Available information certainly supports the use of magnesium, in doses similar to those of the LIMIT-2 trial, as a standard component of the initial management of patients presenting with acute myocardial infarction.

Since these doses exceed those that hospital pharmacists are accustomed to, initial use of this therapy might best be carried out with the cooperation of hospital pharmacists.

Neuromuscular blockade, reported to occur at serum concentrations of 4 to 5 mmol/l, was not seen in this study, but can be diagnosed at the bedside by loss of deep tendon reflexes.

Study	Number	Death	
		Mag.	Placebo
Morton	76	2.5%	5.6%
Rasmussen	270	6.7%	17.0%
Smith	400	1.0%	3.5%
Abraham	94	2.1%	2.2%
Feldstedt	298	6.7%	5.4%
Shechter	115	1.7%	16.1%
Ceremuzynski	48	4.0%	13.0%
Singh	132	4.5%	9.1%
LIMIT-2	2,316	7.8%	10.2%
All	3,749	6.3%	9.5%

(Continued on page 211.)



**Reference:** 1. Jones PH, et al. Once-daily pravastatin in patients with primary hypercholesterolemia: a dose-response study. *Clin Cardiol*. 1991;14:146-151.

## PRAVACHOL® (Pravastatin Sodium Tablets)

### CONTRAINDICATIONS

Hypersensitivity to any component of this medication.

Active liver disease or unexplained, persistent elevations in liver function tests (see WARNINGS).

**Pregnancy and lactation.** Atherosclerosis is a chronic process and discontinuation of lipid-lowering drugs during pregnancy should have little impact on the outcome of long-term therapy of primary hypercholesterolemia. Cholesterol and other products of cholesterol biosynthesis are essential components for fetal development (including synthesis of steroids and cell membranes). Since HMG-CoA reductase inhibitors decrease cholesterol synthesis and possibly the synthesis of other biologically active substances derived from cholesterol, they may cause fetal harm when administered to pregnant women. Therefore, HMG-CoA reductase inhibitors are contraindicated during pregnancy and in nursing mothers. **Pravastatin should be administered to women of childbearing age only when such patients are highly unlikely to conceive and have been informed of the potential hazards.** If the patient becomes pregnant while taking this class of drug, therapy should be discontinued and the patient apprised of the potential hazard to the fetus.

### WARNINGS

**Liver Enzymes:** HMG-CoA reductase inhibitors, like some other lipid-lowering therapies, have been associated with biochemical abnormalities of liver function. Increases of serum transaminase (ALT, AST) values to more than 3 times the upper limit of normal occurring on 2 or more (not necessarily sequential) occasions have been reported in 1.3% of patients treated with pravastatin in the U.S. over an average period of 18 months. These abnormalities were not associated with cholestasis and did not appear to be related to treatment duration. In those patients in whom these abnormalities were believed to be related to pravastatin and who were discontinued from therapy, the transaminase levels usually fell slowly to pretreatment levels. These biochemical findings are usually asymptomatic although worldwide experience indicates that anorexia, weakness, and/or abdominal pain may also be present in rare patients.

As with other lipid-lowering agents, liver function tests should be performed during therapy with pravastatin. Serum aminotransferases, including ALT (SGPT), should be monitored before treatment begins, every six weeks for the first three months, every eight weeks during the remainder of the first year, and periodically thereafter (e.g., at about six-month intervals). Special attention should be given to patients who develop increased transaminase levels. Liver function tests should be repeated to confirm an elevation and subsequently monitored at more frequent intervals. If increases in AST and ALT equal or exceed three times the upper limit of normal and persist, then therapy should be discontinued. Persistence of significant aminotransferase elevations following discontinuation of therapy may warrant consideration of liver biopsy.

Active liver disease or unexplained transaminase elevations are contraindications to the use of pravastatin (see CONTRAINDICATIONS). Caution should be exercised when pravastatin is administered to patients with a history of liver disease or heavy alcohol ingestion (see CLINICAL PHARMACOLOGY: Pharmacokinetics/Metabolism). Such patients should be closely monitored, started at the lower end of the recommended dosing range, and titrated to the desired therapeutic effect.

**Skeletal Muscle: Rhabdomyolysis with renal dysfunction secondary to myoglobinuria has been reported with pravastatin and other drugs in this class.** Uncomplicated myalgia has also been reported in pravastatin-treated patients (see ADVERSE REACTIONS). Myopathy, defined as muscle aching or muscle weakness in conjunction with increases in creatine phosphokinase (CPK) values to greater than 10 times the upper limit of normal was reported to be possibly due to pravastatin in only one patient in clinical trials (<0.1%). Myopathy should be considered in any patient with diffuse myalgias, muscle tenderness or weakness, and/or marked elevation of CPK. Patients should be advised to report promptly unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever. **Pravastatin therapy should be discontinued if markedly elevated CPK levels occur or myopathy is diagnosed or suspected.** Pravastatin therapy should also be temporarily withheld in any patient experiencing an acute or serious condition predisposing to the development of renal failure secondary to rhabdomyolysis, e.g., sepsis; hypotension; major surgery; trauma; severe metabolic, endocrine, or electrolyte disorders; or uncontrolled epilepsy.

The risk of myopathy during treatment with lovastatin is increased if therapy with either cyclosporine, gemfibrozil, erythromycin, or niacin is administered concurrently. There is no experience with the use of pravastatin together with cyclosporine. Myopathy has not been observed in clinical trials involving small numbers of patients who were treated with pravastatin together with niacin. One trial of limited size involving combined therapy with pravastatin and gemfibrozil showed a trend toward more frequent CPK elevations and patient withdrawals due to musculoskeletal symptoms in the group receiving combined treatment as compared with the groups receiving placebo, gemfibrozil, or pravastatin monotherapy. Myopathy was not reported in this trial (see PRECAUTIONS: Drug Interactions). One patient developed myopathy when clofibrate was added to a previously well tolerated regimen of pravastatin; the myopathy resolved when clofibrate therapy was stopped and pravastatin treatment continued. **The use of fibrates alone may occasionally be associated with myopathy. The combined use of pravastatin and fibrates should generally be avoided.**

### PRECAUTIONS

**General:** Pravastatin may elevate creatine phosphokinase and transaminase levels (see ADVERSE REACTIONS). This should be considered in the differential diagnosis of chest pain in a patient on therapy with pravastatin.

**Homozygous Familial Hypercholesterolemia.** Pravastatin has not been evaluated in patients with rare homozygous familial hypercholesterolemia. In this group of patients, it has been reported that HMG-CoA reductase inhibitors are less effective because the patients lack functional LDL receptors.

**Renal Insufficiency:** A single 20 mg oral dose of pravastatin was administered to 24 patients with varying degrees of renal impairment (as determined by creatinine clearance). No effect was observed on the pharmacokinetics of pravastatin or its 3- $\alpha$ -hydroxy isomeric metabolite (SQ 31,906). A small increase was seen in mean AUC values and half-life ( $t_{1/2}$ ) for the inactive enzymatic ring hydroxylation metabolite (SQ 31,945). Given this small sample size, the dosage administered, and the degree of individual variability, patients with renal impairment who are receiving pravastatin should be closely monitored.

**Information for Patients:** Patients should be advised to report promptly unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever.

**Drug Interactions:** Immunosuppressive Drugs, Gemfibrozil, Niacin (Nicotinic Acid), Erythromycin: See WARNINGS: Skeletal Muscle.

**Antipyrine:** Clearance by the cytochrome P450 system was unaltered by concomitant administration of pravastatin. Since pravastatin does not appear to induce hepatic drug-metabolizing enzymes, it is not expected that any significant interaction of pravastatin with other drugs (e.g., phenytoin, quinidine) metabolized by the cytochrome P450 system will occur.

**Cholestyramine/Colestipol:** Concomitant administration resulted in an approximately 40 to 50% decrease in the mean AUC of pravastatin. However, when pravastatin was administered 1 hour before or 4 hours after cholestyramine or 1 hour before colestipol and a standard meal, there was no clinically significant decrease in bioavailability or therapeutic effect. (See DOSAGE AND ADMINISTRATION: Concomitant Therapy.)

**Warfarin:** In a study involving 10 healthy male subjects given pravastatin and warfarin concomitantly for 6 days, bioavailability parameters at steady state for pravastatin (parent compound) were not altered. Pravastatin did not alter the plasma protein-binding of warfarin. Concomitant dosing did increase the AUC and C<sub>max</sub> of warfarin but did not produce any changes in its anticoagulant action (i.e., no increase was seen in mean prothrombin time after 6 days of concomitant therapy). However, bleeding and extreme prolongation of prothrombin time has been reported with another drug in this class. Patients receiving warfarin-type anticoagulants should have their prothrombin times closely monitored when pravastatin is initiated or the dosage of pravastatin is changed.

**Cimetidine:** The AUC<sub>0-12h</sub> for pravastatin when given with cimetidine was not significantly different from the AUC for pravastatin when given alone. A significant difference was observed between the AUC's for pravastatin when given with cimetidine compared to when administered with antacid.

**Digoxin:** In a crossover trial involving 18 healthy male subjects given pravastatin and digoxin concurrently for 9 days, the bioavailability parameters of digoxin were not affected. The AUC of pravastatin tended to increase, but the overall bioavailability of pravastatin plus its metabolites SQ 31,906 and SQ 31,945 was not altered.

**Gemfibrozil:** In a crossover study in 20 healthy male volunteers given concomitant single doses of pravastatin and gemfibrozil, there was a significant decrease in urinary excretion and protein binding of pravastatin. In addition, there was a significant increase in AUC, C<sub>max</sub>, and T<sub>max</sub> for the pravastatin metabolite SQ 31,906. Combination therapy with pravastatin and gemfibrozil is generally not recommended.

In interaction studies with aspirin, antacids [1 hour prior to PRAVACHOL (pravastatin sodium)], cimetidine, nicotinic acid, or probucol, no statistically significant differences in bioavailability were seen when PRAVACHOL was administered.

**Other Drugs:** During clinical trials, no noticeable drug interactions were reported when PRAVACHOL was added to: diuretics, antihypertensives, digitalis, converting-enzyme inhibitors, calcium channel blockers, beta-blockers, or nitroglycerin.

**Endocrine Function:** HMG-CoA reductase inhibitors interfere with cholesterol synthesis and lower circulating cholesterol levels and, as such, might theoretically blunt adrenal or gonadal steroid hormone production. Results of clinical trials with pravastatin in males and post-menopausal females were inconsistent with regard to possible effects of the drug on basal steroid hormone levels. In a study of 21 males, the mean testosterone response to human chorionic gonadotropin was significantly reduced ( $p < 0.004$ ) after 16 weeks of treatment with 40 mg of pravastatin. However, the percentage of patients showing a  $\geq 50\%$  rise in plasma testosterone after human chorionic gonadotropin stimulation did not change significantly after therapy in these patients. The effects of HMG-CoA reductase inhibitors on spermatogenesis and fertility have not been studied in adequate numbers of patients. The effects, if any, of pravastatin on the pituitary-gonadal axis in pre-menopausal females are unknown. Patients treated with pravastatin who display clinical evidence of endocrine dysfunction should be evaluated appropriately. Caution should also be exercised if an HMG-CoA reductase inhibitor or other agent used to lower cholesterol levels is administered to patients also receiving other drugs (e.g., ketoconazole, spironolactone, cimetidine) that may diminish the levels or activity of steroid hormones.

**CNS Toxicity:** CNS vascular lesions, characterized by perivascular hemorrhage and edema and mononuclear cell

infiltration of perivascular spaces, were seen in dogs treated with pravastatin at a dose of 25 mg/kg/day, a dose that produced a plasma drug level about 50 times higher than the mean drug level in humans taking 40 mg/day. Similar CNS vascular lesions have been observed with several other drugs in this class.

A chemically similar drug in this class produced optic nerve degeneration (Wallerian degeneration of retinogeniculate fibers) in clinically normal dogs in a dose-dependent fashion starting at 60 mg/kg/day, a dose that produced mean plasma drug levels about 30 times higher than the mean drug level in humans taking the highest recommended dose (as measured by total enzyme inhibitory activity). This same drug also produced vestibulocochlear Wallerian-like degeneration and retinal ganglion cell chromatolysis in dogs treated for 14 weeks at 180 mg/kg/day, a dose which resulted in a mean plasma drug level similar to that seen with the 60 mg/kg dose.

**Carcinogenesis, Mutagenesis, Impairment of Fertility:** In a 2-year study in rats fed pravastatin at doses of 10, 30, or 100 mg/kg body weight, there was an increased incidence of hepatocellular carcinomas in males at the highest dose ( $p < 0.01$ ). Although rats were given up to 125 times the human dose (HD) on a mg/kg body weight basis, their serum drug levels were only 6 to 10 times higher than those measured in humans given 40 mg pravastatin as measured by AUC.

The oral administration of 10, 30, or 100 mg/kg (producing plasma drug levels approximately 0.5 to 5.0 times human drug levels at 40 mg) of pravastatin to mice for 22 months resulted in a statistically significant increase in the incidence of malignant lymphomas in treated females when all treatment groups were pooled and compared to controls ( $p < 0.05$ ). The incidence was not dose-related and male mice were not affected.

A chemically similar drug in this class was administered to mice for 72 weeks at 25, 100, and 400 mg/kg body weight, which resulted in mean serum drug levels approximately 3, 15, and 33 times higher than the mean human serum drug concentration (as total inhibitory activity) after a 40 mg oral dose. Liver carcinomas were significantly increased in high-dose females and mid- and high-dose males, with a maximum incidence of 90 percent in males. The incidence of adenomas of the liver was significantly increased in mid- and high-dose females. Drug treatment also significantly increased the incidence of lung adenomas in mid- and high-dose males and females. Adenomas of the eye Harderian gland (a gland of the eye of rodents) were significantly higher in high-dose mice than in controls.

No evidence of mutagenicity was observed *in vitro*, with or without rat-liver metabolic activation, in the following studies: microbial mutagen tests, using mutant strains of *Salmonella typhimurium* or *Escherichia coli*; a forward mutation assay in L5178Y TK +/− mouse lymphoma cells; a chromosomal aberration test in hamster cells; and a gene conversion assay using *Saccharomyces cerevisiae*. In addition, there was no evidence of mutagenicity in either a dominant lethal test in mice or a micronucleus test in mice.

In a study in rats, with daily doses up to 500 mg/kg, pravastatin did not produce any adverse effects on fertility or general reproductive performance. However, in a study with another HMG-CoA reductase inhibitor, there was decreased fertility in male rats treated for 34 weeks at 25 mg/kg body weight, although this effect was not observed in a subsequent fertility study when this same dose was administered for 11 weeks (the entire cycle of spermatogenesis, including epididymal maturation). In rats treated with this same reductase inhibitor at 180 mg/kg/day, seminiferous tubule degeneration (necrosis and loss of spermatogenic epithelium) was observed. Although not seen with pravastatin, two similar drugs in this class caused drug-related testicular atrophy, decreased spermatogenesis, spermatocytic degeneration, and giant cell formation in dogs. The clinical significance of these findings is unclear.

**Pregnancy: Pregnancy Category X:** See CONTRAINDICATIONS.

Safety in pregnant women has not been established. Pravastatin was not teratogenic in rats at doses up to 1000 mg/kg daily or in rabbits at doses of up to 50 mg/kg/day. These doses resulted in 20x (rabbit) or 240x (rat) the human exposure based on surface area (mg/meter<sup>2</sup>). However, in studies with another HMG-CoA reductase inhibitor, skeletal malformations were observed in rats and mice. PRAVACHOL (pravastatin sodium) should be administered to women of child-bearing potential only when such patients are highly unlikely to conceive and have been informed of the potential hazards. If the woman becomes pregnant while taking PRAVACHOL, it should be discontinued and the patient advised again as to the potential hazards to the fetus.

**Nursing Mothers:** A small amount of pravastatin is excreted in human breast milk. Because of the potential for serious adverse reactions in nursing infants, women taking PRAVACHOL should not nurse (see CONTRAINDICATIONS).

**Pediatric Use:** Safety and effectiveness in individuals less than 18 years old have not been established. Hence, treatment in patients less than 18 years old is not recommended at this time. (See also PRECAUTIONS: General.)

### ADVERSE REACTIONS

Pravastatin is generally well tolerated; adverse reactions have usually been mild and transient. In 4-month long placebo-controlled trials, 1.7% of pravastatin-treated patients and 1.2% of placebo-treated patients were discontinued from treatment because of adverse experiences attributed to study drug therapy; this difference was not statistically significant. In long-term studies, the most common reasons for discontinuation were asymptomatic serum transaminase increases and mild, non-specific gastrointestinal complaints. During clinical trials the overall incidence of adverse events in the elderly was not different from the incidence observed in younger patients.

**Adverse Clinical Events:** All adverse clinical events (regardless of attribution) reported in more than 2% of pravastatin-treated patients in the placebo-controlled trials are identified in the table below; also shown are the percentages of patients in whom these medical events were believed to be related or possibly related to the drug:

Body System/Event	All Events %		Events Attributed to Study Drug %	
	Pravastatin (N = 900)	Placebo (N = 411)	Pravastatin (N = 900)	Placebo (N = 411)
Cardiovascular				
Cardiac Chest Pain	4.0	3.4	0.1	0.0
Dermatologic				
Rash	4.0*	1.1	1.3	0.9
Gastrointestinal				
Nausea/Vomiting	7.3	7.1	2.9	3.4
Diarrhea	6.2	5.6	2.0	1.9
Abdominal Pain	5.4	6.9	2.0	3.9
Constipation	4.0	7.1	2.4	5.1
Flatulence	3.3	3.6	2.7	3.4
Heartburn	2.9	1.9	2.0	0.7
General				
Fatigue	3.8	3.4	1.9	1.0
Chest Pain	3.7	1.9	0.3	0.2
Influenza	2.4*	0.7	0.0	0.0
Musculoskeletal				
Localized Pain	10.0	9.0	1.4	1.5
Myalgia	2.7	1.0	0.6	0.0
Nervous System				
Headache	6.2	3.9	1.7*	0.2
Dizziness	3.3	3.2	1.0	0.5
Renal/Genitourinary				
Urinary Abnormality	2.4	2.9	0.7	1.2
Respiratory				
Common Cold	7.0	6.3	0.0	0.0
Rhinitis	4.0	4.1	0.1	0.0
Cough	2.6	1.7	0.1	0.0

\*Statistically significantly different from placebo.

The following effects have been reported with drugs in this class:

**Skeletal:** myopathy, rhabdomyolysis.

**Neurological:** dysfunction of certain cranial nerves (including alteration of taste, impairment of extra-ocular movement, facial paresis), tremor, vertigo, memory loss, paresthesia, peripheral neuropathy, peripheral nerve palsy.

**Hypersensitivity Reactions:** An apparent hypersensitivity syndrome has been reported rarely which has included one or more of the following features: anaphylaxis, angioedema, hives, erythematous-like syndrome, polymyalgia rheumatica, vasculitis, purpura, thrombocytopenia, leukopenia, hemolytic anemia, positive ANA, ESR increase, arthritis, arthralgia, urticaria, asthenia, photosensitivity, fever, chills, flushing, malaise, dyspnea, toxic epidermal necrolysis, erythema multiforme, including Stevens-Johnson syndrome.

**Gastrointestinal:** pancreatitis, hepatitis, including chronic active hepatitis, cholestatic jaundice, fatty change in liver, and, rarely, cirrhosis, fulminant hepatic necrosis, and hepatoma; anorexia, vomiting.

**Reproductive:** gynecostasia, loss of libido, erectile dysfunction.

**Eye:** progression of cataracts (lens opacities), ophthalmoplegia.

**Laboratory Test Abnormalities:** Increases in serum transaminase (ALT, AST) values and CPK have been observed (see WARNINGS).

Transient, asymptomatic eosinophilia has been reported. Eosinophil counts usually returned to normal despite continued therapy. Anemia, thrombocytopenia, and leukopenia have been reported with other HMG-CoA reductase inhibitors.

**Concomitant Therapy:** Pravastatin has been administered concurrently with cholestyramine, colestipol, nicotinic acid, probucol and gemfibrozil. Preliminary data suggest that the addition of either probucol or gemfibrozil to therapy with lovastatin or pravastatin is not associated with greater reduction in LDL-cholesterol than that achieved with lovastatin or pravastatin alone. No adverse reactions unique to the combination or in addition to those previously reported for each drug alone have been reported. Myopathy and rhabdomyolysis (with or without acute renal failure) have been reported when another HMG-CoA reductase inhibitor was used in combination with immunosuppressive drugs, gemfibrozil, erythromycin, or lipid-lowering doses of nicotinic acid. Concomitant therapy with HMG-CoA reductase inhibitors and these agents is generally not recommended. (See WARNINGS: Skeletal Muscle and PRECAUTIONS: Drug Interactions.)

### OVERDOSEAGE

There have been no reports of overdoses with pravastatin. Should an accidental overdose occur, treat symptomatically and institute supportive measures as required.



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PRAVACHOL is indicated as an adjunct to diet for the reduction of elevated total and LDL-cholesterol levels in patients with primary hypercholesterolemia (Types IIa and IIb) when the response to diet alone has not been adequate. Active liver disease or unexplained transaminase elevations, pregnancy and lactation are contraindications to the use of pravastatin sodium.

Please see CONTRAINDICATIONS, WARNINGS, PRECAUTIONS, and ADVERSE REACTIONS in the brief summary of prescribing information on the adjacent page.



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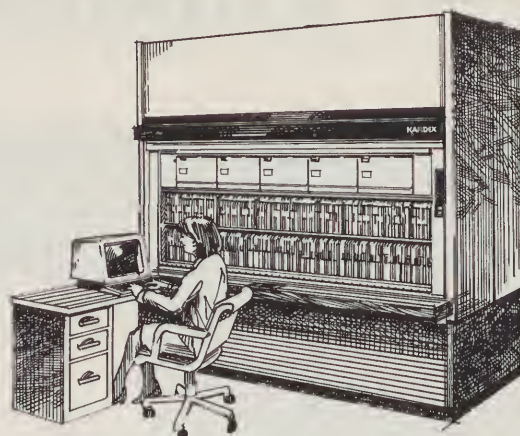
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In January 1935, a new logo appeared on the cover of KANSAS MEDICINE for the first time. This device represents two stethoscopes: the original monaural type as used by Lænnec, and the modern binaural variety. The logo was designed expressly for KANSAS MEDICINE by renowned graphic designer Bradbury Thompson, a native of Topeka and friend of two former editors of the journal, Dr. W.M. Mills and Dr. Lucien Pyle. As another former editor, Dr. Orville R. Clark, wrote in January 1955, the logo "has become as much a part of the journal as any of the features on the inside and is something which is ours alone."



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# KANSAS MEDICINE

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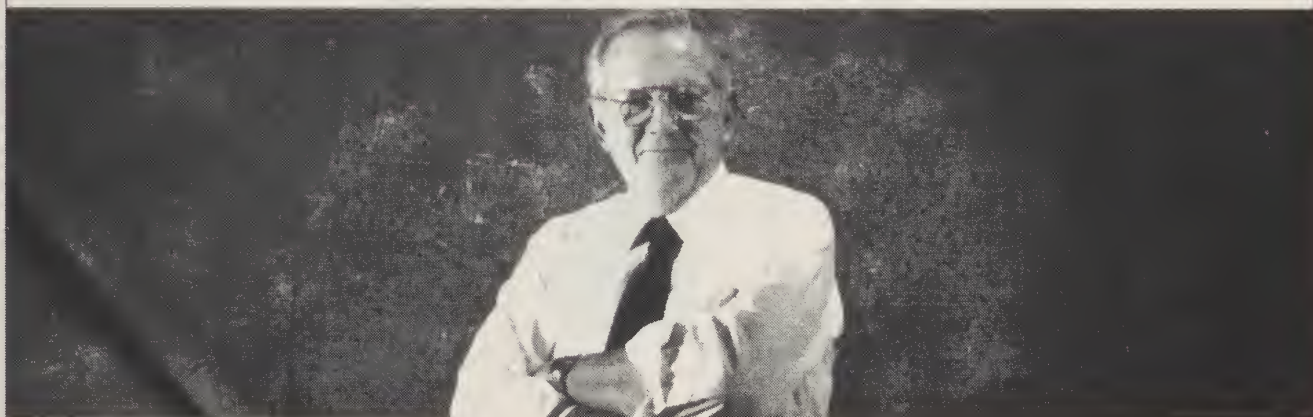
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### **Kansas Insurance Department**

420 SW 9th St., Topeka 66612 913-296-3071

### **Kansas Department on Aging**

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915 SW Harrison, Topeka 66612-1505 913-296-4986

### **Kansas Department of Social & Rehabilitation Services**

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### **EDS Federal**

P.O. Box 4649, Topeka 66604 913-273-5700

### **Disability Determination Unit**

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*(Listings continue on next page.)*

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<b>Kansas Bar Association</b> 1200 SW Harrison, Topeka 66612	913-234-5696
<b>Kansas Chiropractic Association</b> 1334 SW Topeka, Topeka 66612	913-233-0697
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<b>Kansas Pharmacists Association</b> 1308 SW 10th Ave., Topeka 66604	913-232-0439
<b>Kansas State Nurses Association</b> 700 SW Jackson, Suite 601, Topeka 66603	913-233-8638
<b>Kansas Trial Lawyers Association</b> 700 SW Jackson, Topeka 66603	913-232-7756

## Statewide Handicapped Children's Services

A— Advocacy/support  
Dx — Diagnosis  
R — Referral

S — Screening  
Tx — Treatment

<b>Make A Difference Information Network (R)</b> .....	800-332-6262
Department of Education	
Department of Health & Environment	
Families Together Parent Center	
Keys for Networking	
Social & Rehabilitation Services	
<b>Kan Be Healthy (S, R)</b> .....	913-296-3981
Local health departments or SRS State Coordinator	
<b>Kansas Neurological Institute (Dx, R)</b> .....	913-296-5377
3107 W. 21st, Topeka KS 66604	
<b>Services for Children with Special Health Care Needs (S, Dx, Tx)</b> .....	913-296-1313
<b>Deaf-Blind Programs (R)</b> .....	913-296-2062
	913-296-4454
	913-864-4570
<b>University of Kansas Affiliated Facilities (Dx, Tx, S, R, A)</b>	
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Lawrence .....	913-864-4950
Parsons .....	800-362-0390
<b>Make a Difference Info. Network (S, Dx, Tx, R, A)</b> .....	800-332-6262
<b>Parent to Parent, Kansas City (A)</b> .....	913-648-2317
<b>Families Together, Lawrence (R, A)</b> .....	913-841-7241
<b>Kansas Children's Service League (R, A)</b> .....	913-232-0543
<b>State Institutions (Dx, Tx, R)</b> .....	913-296-3774
Local SRS offices	
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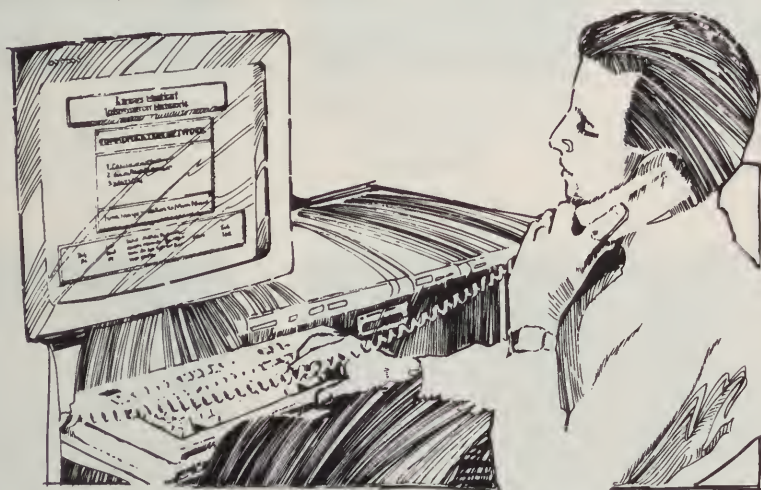
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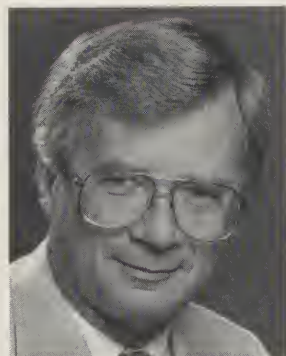
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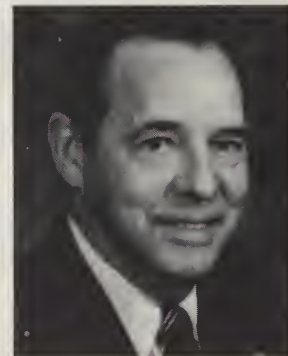
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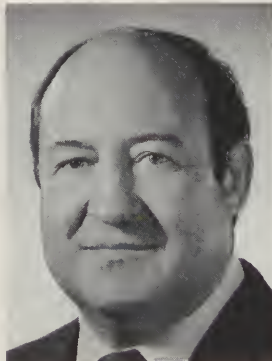




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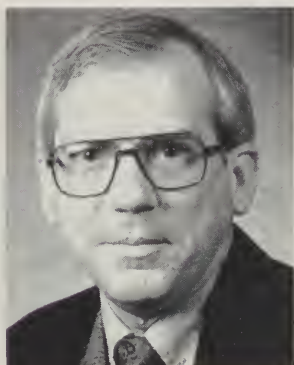
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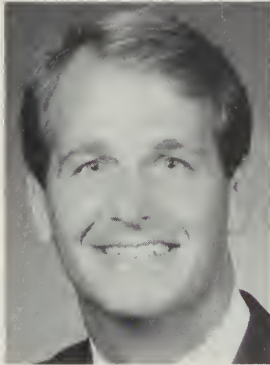


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**NOV. 5, 6 AND 7, 1992**

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# Breast of chicken



3-oz. cooked serving  
of chicken breast

## Today's Pork: Compare it to chicken for a healthy surprise

You may not have considered pork to be a healthy choice for your patients on fat-modified diets. But today's fresh pork compares surprisingly well to chicken in total fat, saturated fat, cholesterol, and calories.<sup>1,2\*</sup>

	Calories	Total Fat	Saturated Fatty Acids	Cholesterol
Chicken Breast, skinless	140	3.0 g	0.9 g	72 mg
Pork Tenderloin, trimmed	139	4.1 g	1.4 g	67 mg
Pork Top Loin Roast (boneless), trimmed	165	6.1 g	2.2 g	66 mg
Center Loin Chop, trimmed	172	6.9 g	2.5 g	70 mg
Chicken Thigh, skinless	178	9.2 g	2.6 g	81 mg

\*Table refers to 3-oz, cooked servings.

# Best of pork



3-oz. cooked serving  
of pork tenderloin

## New study: Pork is now 31% leaner

Pork is leaner today because of significant changes made in breeding and feeding techniques. According to new 1991 official USDA data, fresh pork sold today contains an average of 31% less fat after cooking and trimming than the same pork cuts reported in 1983.<sup>1</sup>

Today's pork fits well within the dietary guidelines recommended by both the American Heart Association and the National Cholesterol Education Program. Here's some advice to help patients on low-fat diets enjoy the variety, extra taste, and versatility of pork:

- Choose the leanest cuts. Shop for cuts with "loin" in the name.
- Trim away any visible fat.
- Keep portions moderate (about 3 oz, cooked).
- Prepare by broiling or roasting, and avoid additional fat in preparation.

1. US Dept of Agriculture. *Composition of Foods: Pork Products*, 1991. Agricultural handbook 8-10.

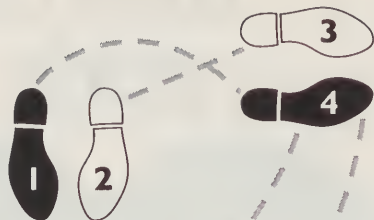
2. US Dept of Agriculture. *Composition of Foods: Poultry Products*, 1979. Agricultural handbook 8-5.

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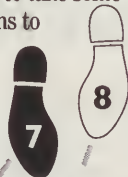
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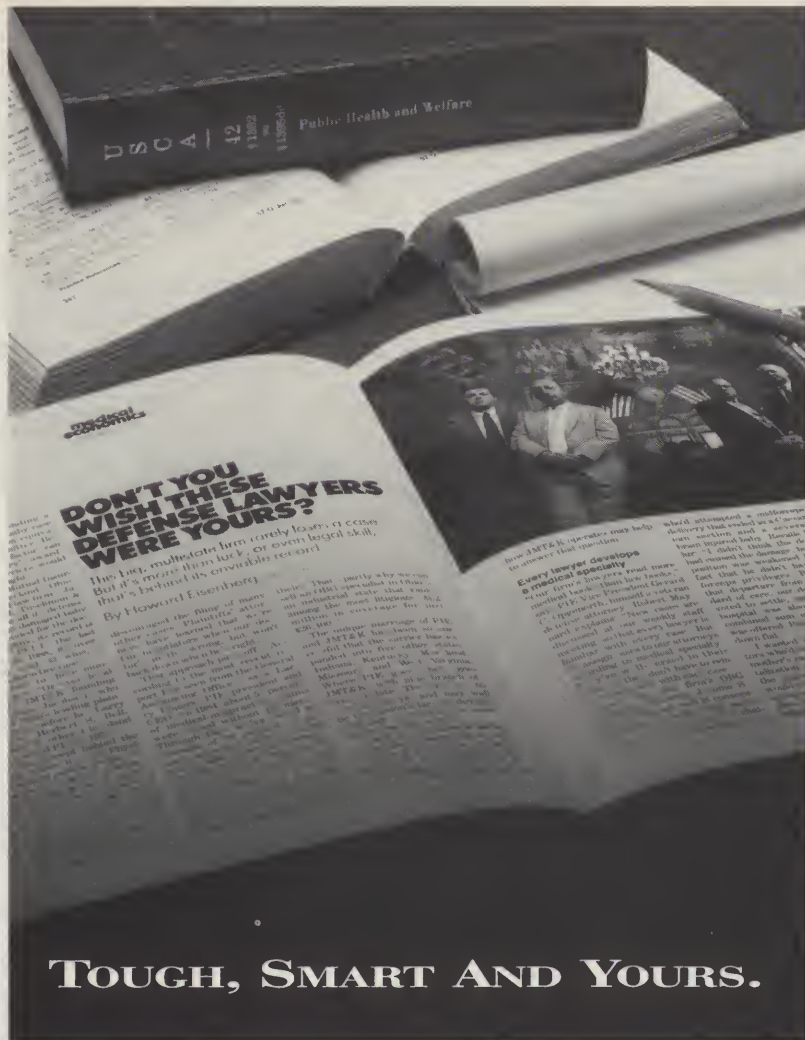
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## AMERICAN MEDICAL ASSOCIATION Principles of Medical Ethics

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The medical profession has long subscribed to a body of ethical statements developed primarily for the benefit of the patient. As a member of this profession, a physician must recognize responsibility not only to patients, but also to society, to other health professionals, and to self. The following Principles adopted by the American Medical Association are not laws, but standards of conduct which define the essentials of honorable behavior for the physician.

- I. A physician shall be dedicated to providing competent medical service with compassion and respect for human dignity.
- II. A physician shall deal honestly with patients and colleagues, and strive to expose those physicians deficient in character or competence, or who engage in fraud or deception.
- III. A physician shall respect the law and also recognize a responsibility to seek changes in those requirements which are contrary to the best interests of the patient.
- IV. A physician shall respect the rights of patients, of colleagues, and of other health professionals, and shall safeguard patient confidences within the constraints of the law.
- V. A physician shall continue to study, apply and advance scientific knowledge, make relevant information available to patients, colleagues, and the public, obtain consultation, and use the talents of other health professionals when indicated.
- VI. A physician shall, in the provision of appropriate patient care, except in emergencies, be free to choose whom to serve, with whom to associate, and the environment in which to provide medical services.
- VII. A physician shall recognize a responsibility to participate in activities contributing to an improved community.

(As revised by the AMA House of Delegates, July 1980. For a detailed discussion of these principles, see the 1992 edition of *Current Opinions*, published by and available from the AMA.)



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- Separate record of overtime shown by employee and totaled by class of work for the policy term involved. (Premium for Workers' Compensation is based on straight time pay for all hours worked and does not include ½ extra pay for overtime.) (Not applicable in Delaware, Pennsylvania, and Utah.)
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- Social Security (Form 941) and State Unemployment Compensation quarterly returns.

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### OTHER FOREIGN

- 118 Afghanistan**
  - 11801 Faculty of Medicine, Kabul University, Kabul
- 132 Argentina**
  - 13201 Facultad de Ciencias Medicas de la Universidad de Buenos Aires, Buenos Aires
  - 13202 Facultad de Ciencias Medicas de la Universidad Nacional de Cordoba, Cordoba
  - 13204 Facultad de Ciencias Medicas, Farmacia y Ramos Menores de la Universidad Nacional del Litoral, Rosario, Santa Fe
  - 13206 Facultad de Ciencias Medicas de la Universidad Nacional de Cuyo, Mendoza, Mendoza
- 143 Australia**
  - 14303 Faculty of Medicine University of Sydney, Sydney, New South Wales
  - 14311 Flinders University School of Medicine, Bedford Park
- 154 Austria**
  - 15407 Medizinische Fakultät der Universität Wien, Wien (40726 from March 13, 1938 to June, 1945)
- 160 Bangladesh**
  - 16002 Dacca Medical College, Ramna Dhaka, Bangladesh
- 165 Belgium**
  - 16501 Faculte de Medecine et de Pharmacie Universite libre de Bruxelles, Bruxelles
  - 16504 Universitaire Katholique de Louvain, Faculte de Medecine, Louvain
- 176 Bolivia**
  - 17601 Univ. Boliviana, Fac. de Ciencias Medicas, La Paz
  - 17602 Facultad de Ciencias Medicas de la Universidad Mayor Real y Pontificia de San Francisco Xavier de Chuquisaca, Sucre
  - 17603 Facultad de Medicina de la Universidad Mayor de San Simon, Cochabamba
- 187 Brazil**
  - 18708 Universidade Federal de Parana, Faculdade de Medicina, Curitiba, Parana

- 209 Burma**
  - 20901 Institute of Medicine I, Rangoon
- 215 Cambodia**
  - 21501 Ecole Royal de Medicine du Cambode, Phnompenh
- 220 Sri Lanka (formerly Ceylon)**
  - 22001 University of Sri Lanka Colombo Faculty of Medicine
- 231 Chile**
  - 23101 Facultad de Medicina de la Universidad de Chile, Santiago
- 242 China**
  - 242 China (also see 243 Effective January 1, 1977)
  - 24209 St. John's University (Pennsylvania Medical School, Shanghai, Kiangsu) (Extinct)
  - 24216 National Shanghai Medical College, Shanghai, Kiangsu
  - 24217 West China Union University College of Medicine and Dentistry, Chengtu, Szechuan
  - 24222 Aurora University Faculty of Medicine, Shanghai, Kiangsu (Extinct)
  - 24239 Shansi University Medical College, Taiyuan, Shansi
- 243 China**
  - 24338 National Honan University Medical College, Kaifeng, Honan (24238 Prior to 1-17-71)
  - 24351 National Defense Medical Center, School of Medicine, Shanghai, Kiangsu (24251 Prior to 1-17-71)
- 244 Taiwan**
  - 244 Taiwan (Formosa) effective 1-17-71
  - 24402 College of Medicine National Taiwan University, Taipei (38502 Prior to 1-17-71)
  - 24404 Taipei Medical College, Taipei (38504 Prior to 1-17-71)
  - 24405 China Medical College, Taichung (38505 before 1-17-71)
  - 24406 Chung Shan Medical and Dental College, Taiwan
- 264 Colombia**
  - 26401 Facultad de Medicina de la Universidad Nacional de Colombia Ciudad Universitaria, Bogota, Cundinamarca
  - 26402 Facultad de Medicina de la Universidad de Cartagena, Cartagena, Bolivar
  - 26404 Facultad de Medicina de la Pontificia Universidad Javeriana, Bogota, Cundinamarca
  - 26406 Facultad de Medicina de la Universidad de Caldas, Manizales, Caldas
  - 26407 Facultad de Medicina de la Universidad del Cauca, Popayan, Cauca
- 275 Cuba**
  - 27501 Facultad de Medicina de la Universidad de la Habana, Havana
  - 27502 Escuela de Medicina, Universidad de Oriente, Santiago
- 286 Czechoslovakia**
  - 28601 Deutsche Univerzita Medizinische Fakulta, Praha (15405 before 1919)
  - 28602 Charles Univerzita Fakulta of PedGen Medicine, Praha
- 297 Denmark**
  - 29703 Odense Univ. det Laegevidenskabelige, Odense
- 305 Dominica**
  - 30501 Ross University School of Medicine and Veterinary Medicine, Roseau

- 308 Dominican Republic**  
 30801 Facultad de Medicina de la Universidad de Santo Domingo, Ciudad Trujillo  
 30803 Universidad Central Del Este  
 30805 Instituto Tecnológico de Santo Domingo, Santo Domingo  
 30807 Universidad Cecet, Escuela De Medicina, Santo Domingo  
 30811 Univ. Tech. (Utesa) Escuela de Medicina, Santiago
- 319 Ecuador**  
 31901 Facultad de Ciencias Medicas de la Universidad Central, Quito
- 330 Egypt (United Arab Republic)**  
 33002 Kasr-el-Aini Faculty of Medicine, Cairo University, Cairo (Formerly Fouad First University Faculty of Medicine)  
 33003 Faculty of Medicine Alexandria University, Alexandria  
 33004 Abbasis Faculty of Medicine, University of Ein Shams, Cairo
- 341 El Salvador**  
 34104 Facultad de Medicina Universidad Nacional del Salvador, San Salvador
- 352 England**  
 35204 University of Newcastle-Upon-Tyne Medical School (Before August 1963 Kings College University in Durham)  
 35205 School of Medicine University of Leeds, Leeds  
 35207 University of London Faculty of Medicine, London  
 35211 Registrable Qualifications granted by English Conjoint Board (Royal College of Surgeons of England/Royal College of Physicians of London)
- 385 Formosa (Taiwan)**  
 385 (Also see 244 Taiwan [Effective 1-17-71])  
 38501 Kaohsiung (takau) Medical College, Kaohsiung  
 38502 College of Medicine National Taiwan University, Taipei  
 38503 National Defense Medical Center, Taipei  
 38505 China Medical College, Taichung
- 396 France**  
 39606 Faculte de Medecine de l'Universite de Paris, Paris, Seine  
 39607 Faculte mixte de Medecine et de Pharmacie de l'Universite de Toulouse, Toulouse, Haute-Garonne  
 39620 Universite de Picardie, UER de Medecine, Amiens
- 407 Germany**  
 407 (Also see 408409—East and West Germany [Effective 1-1-71])  
 40707 Medizinische Fakultät der Georg-August-Universität, Göttingen, Niedersachsen  
 40710 Medizinische Fakultät der Universität Heidelberg, Heidelberg, Baden-Württemberg  
 40715 Medizinische Fakultät der Philipps-Universität, Marburg/Lahn, Hessen  
 40716 Medizinische Fakultät der Ludwig Maximilians-Universität, München, Bayern  
 40721 Medizinische Fakultät der Universität Hamburg, Hamburg  
 40723 Medizinische Fakultät der Johann-Wolfgang-Goethe-Universität, Frankfurt-Am-Main, Hessen  
 40733 Medizinische Fakultät der Freien Universität Berlin, Berlin  
 40902 Medizinische Fakultät Rheinischen Friedrich Wilhelms Universität, Bonn (40702 before 1971)  
 40905 Medizinische Fakultät Albert-Ludwigs-Universität Freiburg im Breisgau  
 40921 Medizinische Fakultät Universität Hamburg, Hamburg (40721 before 1971)  
 40933 Medizinische Fakultät Freien Universität, Berlin, Berlin (40733 Prior to 1-1-71)
- 418 Greece**  
 41801 Faculty of Medicine National University of Athens, Athens  
 41802 Faculty of Medicine University of Thessaloniki, Thessaloniki
- 429 Guatemala**  
 42901 Facultad de Ciencias Medicas, Universidad de San Carlos, Guatemala
- 451 Honduras**  
 45101 Facultad de Medicina y Cirugia de la Universidad Nacional Autónoma de Honduras, Tegucigalpa
- 473 Hungary**  
 47301 Orvosi Fakultás Tudományegyetem, Budapest
- 495 India**  
 49501 University of Bombay, Affiliated Medical Colleges are:  
 a. Grant Medical College Bombay University, Bombay, Maharashtra  
 b. Seth Gorhandas Sunderdas Medical College Bombay University, Bombay, Maharashtra  
 49503 Guru Nanak Medical College, Guru Nanak University, Amritsar, Punjab  
 49504 Madras Medical College Madras University, Madras, Madras  
 49508 Christian Medical College Punjab University, Ludhiana, Punjab
- 49509 St. John's Medical College, Bangalore, Mysore (before June 1966: Government Medical College, Mysore University, Mysore)  
 49511 Andhra Medical College Andhra University, Visakhapatnam, Andhra  
 49515 Prince of Wales Medical College, Patiala University, Bankipore Patiala, Bihar  
 49516 Stanley Medical College Madras University, Madras, Madras  
 49517 Topiwala National Medical College, Bombay University, Bombay, Maharashtra  
 49518 Assam Medical College Gauhati University, Dibrugarh, Assam  
 49520 M.G.M. Medical College, Indore Madhya Pradesh  
 49521 Osmania Medical College Osmania University, Hyderabad, Andhra  
 49523 Medical College Baroda University, Baroda, Gujarat  
 49527 Christian Medical College, Vellore, Madras  
 49528 Byramjee Jeejeebhoy Medical College, Poona, Maharashtra  
 49529 Government Medical College Punjab University, Patiala, Punjab  
 49530 Sawai Man Singh Medical College Rajasthan University, Jaipur, Rajasthan  
 49531 Medical College Kerala University, Trivandrum, Kerala  
 49533 Medical College, Bangalore University, Mysore  
 49534 Gajra Rao Medical College Vikram University, Gwalior, Madhya Pradesh  
 49535 Karnatak Medical College Karnatak University, Hubli, Mysore  
 49536 All-India Institute of Medical Sciences, New Delhi, Delhi  
 49537 Kasturba Medical College Karnatak University, Manipal, Mysore  
 49541 G.S.V. Memorial Medical College Lucknow University, Kampur, Uttar Pradesh  
 49545 Maulana Azad Med. College, Univ. of Delhi, New Delhi  
 49547 Medical College Jabalpur University, Jabalpur, Madhya Pradesh  
 49548 M.P. Shah Medical College Gujarat University, Jamnagar, Gujarat  
 49549 Gandhi Medical College Vikram University, Bhopal, Madhya Pradesh  
 49550 Guntur Medical College Andhra University, Guntur, Andhra  
 49552 St. John's Medical College, Bangalore University, Bangalore, Mysore  
 49554 Rajendra Medical College, Ranchi, Bihar  
 49555 Sardar Patel Medical College, Bikaner  
 49557 Kakatiya Medical College, Warangal, Andhra Pradesh  
 49562 Kurnool Medical College, Venkatesvara University, Kurnool  
 49568 College Medical Sciences Banaras Hindu University, Varanasi, Uttar Pradesh  
 49572 Gov. Med. Coll., Gulbarga Univ., Bellary, Karnataka  
 49573 Armed Forces Medical College, Poona  
 49574 Ravindra Nath Tagore Medical College, Udaipur  
 49576 Municipal Medical College, Gujarat University, Ahmedabad, Gujarat  
 49579 V.S.S. Med. Coll., Sambalpur Univ., Burla, Orissa  
 49583 Indira Gandhi Medical College, Nagpur  
 49596 Lokmanya Tilak Mun Medical College, Bombay University, Bombay, Maharashtra  
 49597 Dr. Vaishampayan Memorial Medical College, Shivaji University, Shalapur, Maharashtra  
 49610 M.L.B. Medical College, Juansi  
 49611 Sri Krishna Medical College, Muzaffarpur, Bihar
- 506 Indonesia**  
 50602 Faculty of Medicine Airlangga University, Surabaya
- 517 Iran**  
 51701 Faculty of Medicine University of Teheran, Teheran  
 51703 Faculty of Medicine, Tabriz
- 528 Iraq**  
 52801 Faculty of Medicine Baghdad University, Baghdad
- 539 Ireland**  
 53901 Faculty of Medicine Queen's University of Belfast, Belfast  
 53902 National University of Ireland, Constituent Colleges are:  
 a. Faculty of Medicine University College, Dublin  
 b. Faculty of Medicine University College, Cork  
 c. Faculty of Medicine, Galway  
 53903 School of Physic Trinity College University of Dublin, Dublin
- 550 Israel**  
 55001 The Hebrew University-Hadassah Medical School, Jerusalem  
 55002 Tel Aviv University, Tel Aviv
- 561 Italy**  
 56101 Facoltà di Medicina e Chirurgia dell'Università di Bologna, Bologna  
 56115 Facoltà di Medicina e Chirurgia dell'Università di Perugia, Perugia  
 56117 Facoltà di Medicina e Chirurgia, Rome  
 56119 Facoltà di Medicina e Chirurgia dell'Università di Siena, Siena  
 56120 Facoltà di Medicina e Chirurgia dell'Università di Torino, Turin
- 572 Japan**  
 57211 Tokyo Medical College (Nippon Ikadaigaku) Hongo, Tokyo (Extinct)  
 57241 Faculty of Medicine Shinshu University, Matsumoto, Nagano



- 57249 Tokyo Medical College, Tokyo
- 583 Korea (South)**  
 58301 Severence Medical College Yonsei University, Seoul  
 58302 College of Medicine Seoul National University, Seoul  
 58303 Korea University Medical College, Seoul  
 58304 College of Medicine Kyong-Puk National University, Taegu  
 58306 College of Medicine Chun Nam National University, Kwangju  
 58309 College of Medicine Pusan National University, Pusan  
 58310 College of Medicine Catholic University, Seoul
- 605 Lebanon**  
 60501 Medical School American University of Beirut, Beirut
- 627 Malta**  
 62701 Faculty of Medicine and Surgery Royal University of Malta, Valetta
- 649 Mexico**  
 64901 Facultad de Medicina de la Universidad Nacional Autonoma de Mexico, Mexico  
 64902 Facultad de Medicina de la Universidad de Nuevo Leon, Monterrey, Nuevo Leon  
 64906 Facultad de Medicina de la Universidad Nacional del Sureste, Merida, Yucatan  
 64914 Facultad de Medicina de la Universidad Autonoma de Guadalajara, Guadalajara, Jalisco  
 64930 School of Medicine, Universidad Autonoma de Monterrey  
 64933 Universidad Autonoma de Ciudad Juarez, Ciudad Juarez, Chihuahua  
 64935 Escuela de Medicina de la Universidad del Noreste, Tampico, Tamaulipas  
 64936 Centro de Estudios Universidad Xochicalco A.C., Cuernavaca, Morelos  
 64954 Universidad Mexicana-Americana del Norte, Reynosa, Tamaulipas
- 660 Netherlands**  
 66061 Faculteit der Geneeskunde Universiteit Van Amsterdam, Amsterdam
- 671 New Zealand**  
 67101 Medical School University of Otago, Dunedin
- 704 Pakistan**  
 70401 King Edward Medical College, Lahore, West Pakistan  
 70402 Dow Medical College, Karachi, Federal Capital Area  
 70403 Dacca Medical College, Dacca, East Pakistan  
 70404 Nishtar Medical College, Multan, West Pakistan  
 70406 Fatima Jinnah Med. Coll. for Women, Lahore  
 70409 Khyber Medical College, Peshawar, North-West Frontier Province  
 70410 Chittagong Medical College, Chittagong, East Pakistan (16001 after 7-1-72)
- 726 Paraguay**  
 72601 Facultad de Medicina de la Universidad Nacional de Asuncion, Asuncion
- 737 Peru**  
 73701 Facultad de Medicina de San Fernando de la Universidad Nacional Mayor de San Marcos, Lima  
 73705 Facultad de Medicina de la Universidad Nacional de San Agustin, Arequipa  
 73706 Facultad de Medicina "Cayetano Heredia" de la Universidad Peruana de Ciencias Medicas y Biologicas, Lima
- 748 Philippines**  
 74801 Faculty of Medicine and Surgery University of Santo Tomas, Manila  
 74802 College of Medicine University of the Philippines, Manila  
 74807 College of Medicine Manila Central University, Manila  
 74808 Institute of Medicine Far Eastern University, Manila  
 74809 College of Medicine Southwestern University, Cebu City
- 74810 College of Medicine University of the East, Quezon City  
 74811 College of Medicine Cebu Institute of Technology, Cebu City
- 759 Poland**  
 75903 Warsaw Medical Academy  
 75911 Akademia Medyczna, Bialystock
- 781 Romania**  
 78103 Instut de Medicina si Farmacie, Cluj-Napoca
- 803 Scotland**  
 80301 Faculty of Medicine University of Aberdeen, Aberdeen  
 80302 University of St. Andrews School of Medicine, Dundee  
 80303 Faculty of Medicine University of Edinburgh, Edinburgh  
 80305 Faculty of Medicine University of Glasgow, Glasgow
- 836 South Africa**  
 83601 Medical School University of the Witwatersrand, Johannesburg
- 847 Spain**  
 84701 Facultad de Medicina de la Universidad de Barcelona, Barcelona  
 84703 Facultad de Medicina de la Universidad de Granada, Granada  
 84704 Facultad de Medicina de la Universidad de Madrid, Madrid  
 84705 Santiago de Compostela, Santiago  
 84706 Facultad de Medicina de la Universidad de Zaragoza, Zaragoza  
 84708 Facultad de Medicina de la Universidad de Valencia, Valencia  
 84710 Facultad de Medicina de la Universidad de Salamanca, Salamanca  
 84711 Facultad de Medicina de la Universidad Catolica Navarra, Pamplona
- 869 Switzerland**  
 86901 Medizinische Fakultät der Universität Basel, Basel  
 86902 Medizinische Fakultät der Universität Bern, Bern  
 86905 Faculte de Medecine de l'Universite de Lausanne, Lausanne
- 875 Syria**  
 87501 Faculty of Medicine Damascus University, Damascus
- Taiwan (See Formosa)**
- 891 Thailand**  
 89101 Faculty of Medicine at Chulalongkorn Hospital University of Medical Sciences, Bangkok  
 89102 Faculty of Medicine at Sariraj Hospital University of Medical Sciences, Thonburi  
 89104 Faculty of Medicine at Ramathibodi Hospital, Mahidol University, Bangkok
- 902 Turkey**  
 90201 Tıp Fakültesi Istanbul Üniversitesi, Istanbul  
 90205 Hacettepe University Faculty of Medicine, Ankara
- 913 Russia**  
 91302 Voronezh Medical Institute, Voronezh
- 915 Egypt**  
 91504 Faculty of Medicine, University Ein Shams, Cairo
- 917 United Kingdom-England-Wales-Northern Ireland**  
 91707 University of London Faculty of Medicine, London (35207 before 1971)  
 91708 University of Manchester Faculty of Medicine, Manchester  
 91801 Queens University, Belfast (53901 before 1971)
- 941 Viet-Nam South**  
 94101 Faculte mixte de Medicine et de Pharmacie Universite de Saigon, Saigon
- 945 Udaipur**  
 94574 Ravindra Nath Tagore Medical College, Udaipur
- 957 Yugoslavia**  
 95702 Medicinski Fakultet Univerziteta u Beogradu, Belgrade

## AIDS Information

CDC National AIDS Clearinghouse  
 National AIDS Hotline  
 (English)  
 (Spanish)  
 (TTY/TDD)

1-800-458-5231

1-800-342-AIDS

1-800-344-7432

1-800-243-7012

# Medical Specialty Codes

The medical specialties used in this directory are self-designated. Thus, they do not necessarily indicate certification by the board of the specialty indicated, nor are they indication of accreditation by the Accreditation Council for Graduate Medical Education.

The codes utilized are derived from the AMA Masterfile Codes for Self-Designation of Practice Specialties, as prepared by the Division of Survey and Data Resources, American Medical Association, March 1990.

<b>A</b>	Allergy	<b>NM</b>	Nuclear Medicine
<b>ADL</b>	Adolescent Medicine	<b>NOTO</b>	Neuro-otology
<b>ADM</b>	Administrative Medicine	<b>NR</b>	Nuclear Radiology
<b>ADT</b>	Addictionology	<b>NS</b>	Neurological Surgery
<b>AM</b>	Aviation Medicine	<b>OBG</b>	Obstetrics and Gynecology
<b>AN</b>	Anesthesiology	<b>OM</b>	Occupational Medicine
<b>BLB</b>	Pathology — Bloodbanking	<b>ON</b>	Oncology
<b>CD</b>	Cardiovascular Disease	<b>OPH</b>	Ophthalmology
<b>CDS</b>	Cardiovascular Surgery	<b>ORS</b>	Orthopedic Surgery
<b>CDTS</b>	Cardiovascular & Thoracic Surgery	<b>OTO</b>	Otorhinolaryngology
<b>CHP</b>	Child Psychiatry	<b>P</b>	Psychiatry
<b>D</b>	Dermatology	<b>PA</b>	Clinical Pharmacology
<b>DR</b>	Radiology, Diagnostic	<b>PATH</b>	Pathology
<b>EENT</b>	Eye, Ear, Nose and Throat	<b>PD</b>	Pediatrics
<b>EM</b>	Emergency Medicine	<b>PDA</b>	Pediatric Allergy
<b>END</b>	Endocrinology	<b>PDC</b>	Pediatric Cardiology
<b>ENT</b>	Ear, Nose & Throat	<b>PDE</b>	Pediatric Endocrinology
<b>ES</b>	Endoscopy Surgery	<b>PDN</b>	Pediatric Neurology
<b>FP</b>	Family Practice	<b>PNP</b>	Pediatric Nephrology
<b>GE</b>	Gastroenterology	<b>PDO</b>	Pediatric Ophthalmology
<b>GP</b>	General Practice	<b>PDS</b>	Pediatric Surgery
<b>GPM</b>	General Preventive Medicine	<b>PGER</b>	Psychogerontology
<b>GPVS</b>	General & Peripheral Vascular Surgery	<b>PH</b>	Public Health
<b>GS</b>	General Surgery	<b>PM</b>	Physical Medicine & Rehabilitation
<b>GYN</b>	Gynecology	<b>PS</b>	Plastic Surgery
<b>HEM</b>	Hematology	<b>PUD</b>	Pulmonary Disease
<b>ID</b>	Infectious Diseases	<b>R</b>	Radiology
<b>IE</b>	Insurance Examination	<b>RHU</b>	Rheumatology
<b>IM</b>	Internal Medicine	<b>RO</b>	Radiology/Oncology
<b>MFM</b>	Maternal Fetal Medicine	<b>SON</b>	Surgical Oncology
<b>N</b>	Neurology	<b>TR</b>	Therapeutic Radiation
<b>NEM</b>	Neonatal-Perinatal Medicine	<b>TS</b>	Thoracic Surgery
<b>NEP</b>	Nephrology	<b>U</b>	Urology
		<b>00</b>	Retired



# Alphabetical Listing

## A

AAMODT MD, LEONARD W, MANHATTAN, KS  
 ABAY MD, EUSTAQUIO O, WICHITA, KS  
 ABBAS MD, DILAWER H, WICHITA, KS  
 ABBUEHL MD, DON R, CHANUTE, KS  
 ABEL, SHARI D, KANSAS CITY, KS  
 ADAMS MD, ALAN W, HAYS, KS  
 ADAMS MD, DWIGHT L, OSAGE CITY, KS  
 ADLI MD, CEMAL M, SHAWNEE MISSION, KS  
 AGUSTIN MD, CONRADO M, WICHITA, KS  
 AHLSTRAND MD, RICHARD A, WICHITA, KS  
 AHLSTROM MD, NANCY G, WICHITA, KS  
 AHMAD MD, ABDU Q, EL DORADO, KS  
 AHMED MD, IFTEKHAR, KANSAS CITY, MO  
 AHNEMANN MD, JANET L, SHAWNEE MISSION, KS  
 AILLON MD, ALEJANDRO J, HALSTEAD, KS  
 AKERS MD, GUY I, FORT SCOTT, KS  
 ALBERS MD, ROBERT C, HAYS, KS  
 ALDIS MD, HENRY, FORT SCOTT, KS  
 ALDIS MD, WILLIAM, FORT SCOTT, KS  
 ALDOROTY MD, NEIL, WICHITA, KS  
 ALEXANDER MD, CHARLES E, KANSAS CITY, KS  
 ALEXANDER MD, SHIRLEY J F, WICHITA, KS  
 ALFONSO MD, MANUEL, WICHITA, KS  
 ALLBRITTEN JR MD, FRANK F, CUNNINGHAM, KS  
 ALLEGRE MD, ANN, KANSAS CITY, KS  
 ALLEN JR MD, WILLIAM R, GREAT BEND, KS  
 ALLEN MD, FRANCES A, NEWTON, KS  
 ALLEN MD, JAMES E, TOPEKA, KS  
 ALLEN MD, JAMES V, SHAWNEE MISSION, KS  
 ALLEN MD, MAX S, SHAWNEE MISSION, KS  
 ALLEN MD, PHILLIP M, WICHITA, KS  
 ALLEN MD, RAY E, LIBERAL, KS  
 ALLEN MD, STEVEN W, WICHITA, KS  
 ALLEN MD, TIMOTHY E, TOPEKA, KS  
 ALLEN, JAY L, WICHITA, KS  
 ALLIN MD, DENNIS M, SHAWNEE MISSION, KS  
 ALLMAN RYAN, LORI, KANSAS CITY, MO  
 ALLRED MD, CHARLES T, SALINA, KS  
 ALMONTE MD, PRISCILLA C, WICHITA, KS  
 ALMONTE MD, RODOLFO O, WICHITA, KS  
 ALQUIST MD, VERYL D, BAXTER SPRINGS, KS  
 ALSOP MD, WILLIAM R, SALINA, KS  
 ALSTOTT MD, JERRY M, SHAWNEE MISSION, KS  
 ALTENBERND MD, ELVIN C, SHAWNEE MISSION, KS  
 ALTER MD, BRUCE R, SYRACUSE, KS  
 ALVARADO, LORRAINE, MC PHERSON, KS  
 ALVAREZ MD, NORBERTO, ARKANSAS CITY, KS  
 AMADO MD, MERCEDES C, SHAWNEE MISSION, KS  
 AMARANENI MD, PRASUNAMBA G, TOPEKA, KS  
 AMAWI MD, MOHAMMAD S, DODGE CITY, KS  
 AMBLER MD, CARL D, PRATT, KS  
 AMEND MD, DOUGLAS J, EMPORIA, KS  
 AMIRANI MD, HOSSEIN, IOWA CITY, IA  
 AMMAR MD, ALEX D, WICHITA, KS  
 AMSTUTZ MD, SAMUEL W, WICHITA, KS  
 ANDERSON MD, EUGENE G, GREEN VALLEY, AZ  
 ANDERSON MD, ALLISON H, SHAWNEE MISSION, KS  
 ANDERSON MD, CRAIG A, OLATHE, KS  
 ANDERSON MD, DALE W, AUGUSTA, KS  
 ANDERSON MD, DAVID J, WICHITA, KS  
 ANDERSON MD, DEBORAH A, KANSAS CITY, KS  
 ANDERSON MD, DOUGLAS S, PAOLA, KS  
 ANDERSON MD, JAMES D, WICHITA, KS  
 ANDERSON MD, JODY, SALINA, KS  
 ANDERSON MD, LARRY R, WELLINGTON, KS  
 ANDERSON MD, PATRICIA W, CONCORDIA, KS  
 ANDERSON MD, WILLIAM A, SHAWNEE MISSION, KS  
 ANDERSON MD, WINSTAN L, SUN CITY WEST, AZ  
 ANDERSON-CLAIR, JENNIFER, SHAWNEE MISSION, KS  
 ANDERSON, CY K, KANSAS CITY, KS  
 ANDERSON, SUSAN R, SHAWNEE MISSION, KS  
 ANTRIM MD, PHILIP J, ANTHONY, KS  
 APGAR MD, ROBERT G, INDEPENDENCE, KS  
 APPENFELLER MD, WILLIAM O, OSAWATOMIE, KS  
 APPELGATE JR MD, FRANCIS R, HAYS, KS  
 APPLING MD, J SCOTT, SHAWNEE MISSION, KS  
 ARAKAWA MD, KASUMI, KANSAS CITY, KS  
 ARDINGER JR MD, ROBERT H, KANSAS CITY, KS  
 ARGO MD, DONALD, MARYSVILLE, KS  
 ARGO MD, TANYA S, WESTMINSTER, CO  
 ARGOSINO MD, RODOLFO, WICHITA, KS  
 ARJUNAN MD, K N, TOPEKA, KS

ARMATO D O, ANDREW A, WICHITA, KS  
 ARMBRUSTER MD, ALBERT A, STILLWELL, KS  
 ARMSTRONG MD, HAROLD J, PITTSBURG, KS  
 ARNOLD MD, L KIRK, SHAWNEE MISSION, KS  
 ARNSPIGER II MD, RICHARD C, SHAWNEE MISSION, KS  
 ARROYO MD, ZEFERINO, GARDEN CITY, KS  
 ARROYO, ERRICK J, KANSAS CITY, KS  
 ARTZ MD, TYRONE D, WICHITA, KS  
 ARTZER MD, DENNIS C, TOPEKA, KS  
 ARUNAKUL MD, PUNYA, TOPEKA, KS  
 ARYANPUR MD, DAVID, BALTIMORE, MD  
 ASHER MD, MARC A, KANSAS CITY, KS  
 ASHKAR MD, ADNAN A, LEAVENWORTH, KS  
 ASHLEY JR MD, B JOHN, TOPEKA, KS  
 ASHLEY MD, BYRON J, TOPEKA, KS  
 ASHLEY MD, SAMUEL G, CHANUTE, KS  
 ASHLEY MD, THOMAS J, TOPEKA, KS  
 ASHWORTH MD, ELIZABETH M, WICHITA, KS  
 ATHON MD, MERRILL D, SHAWNEE MISSION, KS  
 ATKIN MD, J D, YATES CENTER, KS  
 ATOR MD, GREGORY A, KANSAS CITY, KS  
 ATWOOD D O, ERIC B, TOPEKA, KS  
 ATWOOD MD, JEFF B, WAMEGO, KS  
 ATWOOD MD, LARRY C, INDEPENDENCE, KS  
 ATWOOD MD, M DALE, KINSLEY, KS  
 ATWOOD MD, MICHAEL D., TOPEKA, KS  
 AUCAR MD, ALFREDO, ARKANSAS CITY, KS  
 AUNINS MD, JOHN, WICHITA, KS  
 AUSTENFELD MD, JENNIFER, SHAWNEE MISSION, KS  
 AUSTENFELD MD, MARK S, KANSAS CITY, KS  
 AUSTIN MD, CRAIG T, SHAWNEE MISSION, KS  
 AVERILL MD, STUART C, TOPEKA, KS  
 AVES MD, AGNES, PARSONS, KS  
 AVES MD, RENATO B, PARSONS, KS  
 AVILA MD, OSCAR, DODGE CITY, KS  
 AYUTHIA MD, ISSARA I, DODGE CITY, KS

## B

BABEL MD, DOUGLAS B, WOODBRIDGE, IL  
 BABIKIAN MD, PAUL V, WICHITA, KS  
 BACANI MD, OSWALDO C, FREDONIA, KS  
 BACKES MD, DAVID J, WICHITA, KS  
 BACON MD, ARTHUR H, LAKE WORTH, FL  
 BADEEN II MD, LOUIS JOHN, SHAWNEE MISSION, KS  
 BAEHR MD, RALPH H, LEE'S SUMMIT, MO  
 BAEKE JR MD, JOHN L, KANSAS CITY, KS  
 BAILEY MD, WILLIAM A, LAWRENCE, KS  
 BAIR MD, ALBERT E, SUN CITY CENTER, FL  
 BAIR MD, GLENN O, TOPEKA, KS  
 BAJAJ MD, ASHOK K, WICHITA, KS  
 BAJAJ MD, RAVI K, WICHITA, KS  
 BAKER MD, GARY L, KANSAS CITY, KS  
 BAKER MD, MICHAEL P, FORT SCOTT, KS  
 BAKER MD, PHILLIP L, TOPEKA, KS  
 BAKER MD, RAY D, TOPEKA, KS  
 BAKER MD, RICHARD B, MANHATTAN, KS  
 BAKER MD, TRACY M, WICHITA, KS  
 BAKER MD, WILLIAM STEVEN, SHAWNEE MISSION, KS  
 BALANOFF MD, ARNOLD Z, OLATHE, KS  
 BALDRIDGE MD, JOHN A, WICHITA, KS  
 BALDWIN MD, THOMAS F, SHAWNEE MISSION, KS  
 BALES, MITZI M, WICHITA, KS  
 BALLESTER, JOHN M, SHAWNEE MISSION, KS  
 BAMBARA MD, JOHN F, MANHATTAN, KS  
 BAMBINI MD, DANIEL A, CHARLOTTE, NC  
 BAMMEL MD, BRUCE, WICHITA, KS  
 BANKS MD, DONALD E, PAOLA, KS  
 BANKS MD, ROBERT E, PAOLA, KS  
 BANSAL MD, ROOPA O, SHAWNEE MISSION, KS  
 BANSAL MD, SATISH C, SHAWNEE MISSION, KS  
 BANTRUP MD, GREGORY W, KANSAS CITY, KS  
 BANWART MD, JON C, WICHITA, KS  
 BAPTIST MD, JEREMY E, SHAWNEE MISSION, KS  
 BARABAN MD, MARC R, TOPEKA, KS  
 BARASH, BRIAN D, KANSAS CITY, KS  
 BARBA JR MD, ANTONIO P, WICHITA, KS  
 BARBA MD, ESTRELLA G, WICHITA, KS  
 BARBER MD, JAMES L, AUGUSTA, KS  
 BARBERA MD, PORTER E, INDEPENDENCE, KS  
 BARBIERI, CRAIG D, KANSAS CITY, KS  
 BARCLAY MD, ANDREW M, WICHITA, KS  
 BARE II MD, CHARLES E, SHAWNEE MISSION, KS  
 BARELLI MD, PAT A, SHAWNEE MISSION, KS  
 BARKER MD, ELIZABETH B, SHAWNEE MISSION, KS  
 BARKER MD, PATRICK N, PRATT, KS  
 BARKER MD, PATSY, WICHITA, KS  
 BARKER MD, STANTON L, HUTCHINSON, KS  
 BARKER MD, STEVEN E, MINNEAPOLIS, KS  
 BARLOW MD, JOHN M, MANHATTAN, KS  
 BARNES MD, JOE L, SMITH CENTER, KS  
 BARNETT JR MD, THOMAS E, SHAWNEE MISSION, KS  
 BARNETT MD, JAMES A, EMPORIA, KS  
 BARNETT MD, ROBERT E, TOPEKA, KS  
 BARNETT MD, THEODORE M, SHAWNEE MISSION, KS  
 BARNHART MD, RONALD J, SHAWNEE MISSION, KS  
 BARR MD, RICHARD N, SHAWNEE MISSION, KS  
 BARRETT MD, BRADLEY H, NEODESHA, KS  
 BARRICK MD, BRUCE, SHAWNEE MISSION, KS  
 BARTAL MD, ELY, WICHITA, KS  
 BARTH III MD, CHARLES W, WICHITA, KS  
 BARTH, BRADLEY E, SHAWNEE MISSION, KS  
 BARTHOLOME MD, WILLIAM G, KANSAS CITY, KS  
 BASS II MD, ORAL E, WICHITA, KS  
 BASSELL MD, GERARD M, WICHITA, KS  
 BASSETT MD, PAUL M, TOPEKA, KS  
 BATES MD, MICHAEL D, WICHITA, KS  
 BATES MD, MICHAEL N, NEWTON, KS  
 BATNITZKY MD, SOLOMON, KANSAS CITY, KS  
 BATTISTE MD, CYNTHIA, WICHITA, KS  
 BATTY MD, LARRY H, SHAWNEE MISSION, KS  
 BAUER MD, JOSEPH G, DES MOINES, IA  
 BAUER MD, LAFE W, SHAWNEE MISSION, KS  
 BAUER MD, LAIRD A, SHAWNEE MISSION, KS  
 BAUER MD, RICHARD D, HAYS, KS  
 BAUER MD, THOMAS A, HUTCHINSON, KS  
 BAUGHMAN MD, MICHAEL J, GARDEN CITY, KS  
 BAUM MD, CURTIS A, TOPEKA, KS  
 BAUMAN MD, M LEON, WICHITA, KS  
 BAUMANN MD, PAUL A, WICHITA, KS  
 BAVISHI MD, SAROJ A, OLATHE, KS  
 BAXTER MD, KIRKMAN G, KANSAS CITY, KS  
 BAXTER MD, W REESE, SALINA, KS  
 BAYLES MD, HUGH G, EDMONDS, WA  
 BEACH MD, RICHARD R, LAWRENCE, KS  
 BEAHM MD, DONALD E, GREAT BEND, KS  
 BEAL MD, RAYMOND J, BUFFALO, KS  
 BEALE MD, DAVID A, TOPEKA, KS  
 BEAMER MD, R LARRY, WICHITA, KS  
 BEAMON MD, RICHARD F, SHAWNEE MISSION, KS  
 BEARY, WILLIAM M, KANSAS CITY, KS  
 BEATTIE MD, MARY A, WICHITA, KS  
 BEATTY MD, ROBERT M, KANSAS CITY, KS  
 BEBAK MD, DONALD M, WICHITA, KS  
 BEBER MD, JORGE H., WICHITA, KS  
 BECK MD, CHARLES W, WICHITA, KS  
 BECK MD, JOSEPH D, TOPEKA, KS  
 BECK MD, WILLIAM R, NEWTON, KS  
 BECKER MD, KARL E, WICHITA, KS  
 BECKER MD, LESLIE E, KANSAS CITY, KS  
 BECKER MD, NANCY J, SHAWNEE MISSION, KS  
 BEDFORD MD, D R, TOPEKA, KS  
 BEECH MD, RANDALL R, WICHITA, KS  
 BEELMAN MD, FLOYD C, TOPEKA, KS  
 BEEZLEY MD, MICHAEL J, SHAWNEE MISSION, KS  
 BEGGS MD, DAVID F, GARDEN CITY, KS  
 BEGGS, DANIEL A, SHAWNEE MISSION, KS  
 BEILMAN MD, GREG, WICHITA, KS  
 BELL MD, D W, SHAWNEE MISSION, KS  
 BELL MD, MARK G, SALINA, KS  
 BELLER MD, WILLIS L, SUN CITY, AZ  
 BELLOWES-BLAKELY MD, DAVID S, TOPEKA, KS  
 BELOT JR MD, MONTI L, LAWRENCE, KS  
 BELT MD, ROBERT J, SHAWNEE MISSION, KS  
 BELTRAN MD, DELFIN J, WICHITA, KS  
 BELZER MD, EDWARD G, SHAWNEE MISSION, KS  
 BENA MD, JAMES, PITTSBURG, KS  
 BENAGE MD, JOHN F, FORT SCOTT, KS  
 BENJAMIN, ASHLEY B, LAWRENCE, KS  
 BENNING MD, TIMOTHY C, SHAWNEE MISSION, KS  
 BENSON MD, KIRK T, KANSAS CITY, KS  
 BENTON MD, GARY S, WICHITA, KS  
 BERGANT MD, JAMES A, KANSAS CITY, KS  
 BERGH MD, JAMES R, LOUISBURG, KS  
 BERGIN MD, JAMES J, KANSAS CITY, KS  
 BERKEY MD, VERNON A, PITTSBURG, KS



BERKLEY MD, DON H, ABILENE, KS  
 BERKLEY MD, NORMAN W, SENECA, KS  
 BERMAN, ALAN S, SHAWNEE MISSION, KS  
 BERNARD MD, JOHN H, EMPORIA, KS  
 BERRIOS MD, CARLOS R, KANSAS CITY, KS  
 BETHEL MD, CHANDLER S, WICHITA, KS  
 BEUGELSDIJK MD, HENRY PETER, HALSTEAD, KS  
 BEY, LOVIE D, WICHITA, KS  
 BHAGAT, KUNAC P, KANSAS CITY, KS  
 BHARATI MD, RALPH, WICHITA, KS  
 BHARGAVA MD, ASHOK KUMAR, LA CROSSE, KS  
 BHARGAVA MD, BAIKUNTH N, WINFIELD, KS  
 BIBERSTEIN MD, GREG A, MANHATTAN, KS  
 BICHLMEIER MD, FRANKLIN G, SHAWNEE MISSION, KS  
 BIERLEIN MD, KENNETH J, PITTSBURG, KS  
 BIERMANN MD, HENRY J, WICHITA, KS  
 BIGGS MD, J DENNIS, ABILENE, KS  
 BIGHAM, BRYON S, SHAWNEE MISSION, KS  
 BIGLER MD, F CALVIN, SHIPROCK, NM  
 BIGONGIARI MD, LAWRENCE R, WICHITA, KS  
 BILLINGS MD, THOMAS, MC PHERSON, KS  
 BILLINGS, BRIAN M, WICHITA, KS  
 BILLINGSLEY JR MD, JOHN A, IOLA, KS  
 BINGAMAN MD, ROBERT W, WICHITA, KS  
 BINYON MD, KERNIE W, WICHITA, KS  
 BISHOP MD, FRANCIS E, SHAWNEE MISSION, KS  
 BISHOP MD, HENRY R, SHAWNEE MISSION, KS  
 BISHOP MD, RODNEY LEE, LAWRENCE, KS  
 BITTER, CINDY C, CHICAGO, IL  
 BLACK MD, BRYAN L, WICHITA, KS  
 BLACK MD, CYRIL V, PRATT, KS  
 BLACKBURN MD, ROBERT W, COUNCIL GROVE, KS  
 BLACKMAN MD, JACQUES D, WICHITA, KS  
 BLAKE, KATHLEEN M, KANSAS CITY, KS  
 BLEIBERG MD, EFFRAIN, TOPEKA, KS  
 BLETZ MD, DONALD B, SHAWNEE MISSION, KS  
 BLEYTHING, TRACY A, KANSAS CITY, KS  
 BLITZ MD, ROGER, HUTCHINSON, KS  
 BLOCK MD, JEROME E, COFFEYVILLE, KS  
 BLOMQUIST MD, GLENDA L H, SALINA, KS  
 BLOOM MD, BARRY T, WICHITA, KS  
 BLOOM MD, L THEIL, PRATT, KS  
 BLOOM MD, RODNEY L, WICHITA, KS  
 BLOXHAM MD, THOMAS J, WICHITA, KS  
 BOBER MD, JOHN F, WICHITA, KS  
 BOCK MD, PETER A, EUDORA, KS  
 BOESE MD, KENNETH M, MANHATTAN, KS  
 BOGNER MD, PAUL F, NEWTON, KS  
 BOHMER, JAMES T, KANSAS CITY, KS  
 BOHN MD, WILLIAM W, SHAWNEE MISSION, KS  
 BOLES MD, J MICHAEL, SHAWNEE MISSION, KS  
 BOLES MD, R DALE, COMANCHE, OK  
 BOLING MD, J MARK, KANSAS CITY, KS  
 BOLINGER MD, ROBERT E, KANSAS CITY, KS  
 BOLLMAN MD, CHARLES S, JUNCTION CITY, KS  
 BOLT MD, MICHAEL S, WICHITA, KS  
 BOND MD, ROGER C, WICHITA, KS  
 BONEBRAKE MD, C RICHARD, TOPEKA, KS  
 BOOTH, JENNIFER L, SHAWNEE MISSION, KS  
 BOREL MD, DAVID, TOPEKA, KS  
 BORGE MD, CARLOS A, TOPEKA, KS  
 BORGENDALE MD, LLEWELLYN V, WAMEGO, KS  
 BORRA MD, MARIO J, HUTCHINSON, KS  
 BORROR MD, CHERYL A, SAN ANTONIO, TX  
 BOS MD, NORMAN C, HUTCHINSON, KS  
 BOSILEVAC MD, FRED N, KANSAS CITY, KS  
 BOSILJEVAC JR MD, JOSEPH E, EMPORIA, KS  
 BOSSEMAYER II MD, CHARLES H, SALINA, KS  
 BOTTS MD, LARRY D, SHAWNEE MISSION, KS  
 BOUD, THOMAS J, OLATHE, KS  
 BOUDREAUX MD, VELTIN J, WICHITA, KS  
 BOWEN JR MD, HARRY J, TOPEKA, KS  
 BOWEN MD, CLOVIS W, TOPEKA, KS  
 BOWEN MD, JUDITH M, TOPEKA, KS  
 BOWERMAN MD, ROBERT F, HAYS, KS  
 BOWLES MD, MARK H, WICHITA, KS  
 BOWLIN D O, SCOTT E, SHAWNEE MISSION, KS  
 BOXBERGER MD, GREGORY R, WICHITA, KS  
 BOYCE MD, MARY C, WICHITA, KS  
 BOYD MD, HAROLD D, CEIBA, PR  
 BOYD MD, Z REX, WICHITA, KS  
 BOYDEN MD, MARY S, LAWRENCE, KS  
 BOYER MD, DEBORAH A, TOPEKA, KS  
 BOYER MD, ROBERT E, KINGMAN, KS  
 BRACK, JULIE D, SHAWNEE MISSION, KS  
 BRACKE D O, KURT MORGAN, PRATT, KS  
 BRACKETT JR MD, CHARLES E, KANSAS CITY, KS  
 BRADA MD, DONALD ROBERT, WICHITA, KS  
 BRADEN MD, BILL L, WAMEGO, KS  
 BRADFORD, DONNELL L, SHAWNEE MISSION, KS  
 BRADLEY MD, H RUSSELL, EMPORIA, KS

BRADLEY MD, J RODERICK, GREENSBURG, KS  
 BRADLEY MD, KENT R, WICHITA, KS  
 BRADY MD, MARK D, WICHITA, KS  
 BRAHMAN MD, HERBERT D, TOPEKA, KS  
 BRAKE MD, DAVID, WICHITA, KS  
 BRAMBLE MD, JANA D, KANSAS CITY, MO  
 BRANDSTED MD, ERNEST C, MC PHERSON, KS  
 BRANDSTED MD, MARK W, TOPEKA, KS  
 BRANDT, JOHN F, KANSAS CITY, KS  
 BRANIECKI MD, MARYLEE A, NAPERVILLE, IL  
 BRANSON MD, VERNON L, LAWRENCE, KS  
 BRAUN III MD, WILLIAM T, WICHITA, KS  
 BRAUN MD, EDWARD W, FORT SCOTT, KS  
 BRAUN MD, KENNETH, WICHITA, KS  
 BRAUN MD, ROBERT W, TOPEKA, KS  
 BRAUN MD, STEVEN D, HUTCHINSON, KS  
 BRAUN MD, WILLIAM T, FORT ORANGE, FL  
 BRECHEISEN MD, NANCY L, WICHITA, KS  
 BRECKBILL MD, DAVID L, WICHITA, KS  
 BREIT MD, SHARON K, WICHITA, KS  
 BRENNER MD, CYNTHIA L, HAYS, KS  
 BRETHOUR MD, LESLIE J, JUNCTION CITY, KS  
 BREWER MD, ALAN R, WICHITA, KS  
 BREWER MD, MARSHALL A, ULYSSES, KS  
 BREWER MD, SUSAN J, TOPEKA, KS  
 BRIAN MD, DAVID A, DODGE CITY, KS  
 BRIDWELL MD, RUSSELL E, TOPEKA, KS  
 BRILLHART MD, MAXINE T, KANSAS CITY, KS  
 BRINTON MD, EDWARD S, WICHITA, KS  
 BRITTAN MD, ANDREW M, SHAWNEE MISSION, KS  
 BROCKHOUSE MD, JOHN P, EMPORIA, KS  
 BRODSKY MD, TRINA A, TOPEKA, KS  
 BROOKS MD, CHARLES L, OLATHE, KS  
 BROOKS MD, LYLE, WICHITA, KS  
 BROOKS MD, PAUL V, CINCINNATI, OH  
 BROOKS MD, WILLIAM HENRY, KANSAS CITY, KS  
 BROSIUS MD, FRANK C, WICHITA, KS  
 BROSSARD MD, IRIS, WICHITA, KS  
 BROWN JR MD, VAL J, WICHITA, KS  
 BROWN MD, C EVERETT, STAFFORD, KS  
 BROWN MD, C REIFF, GREAT BEND, KS  
 BROWN MD, DAVID J, WICHITA, KS  
 BROWN MD, FRED E, SALIDA, CO  
 BROWN MD, JEFFERY C, WICHITA, KS  
 BROWN MD, MICHAEL D, SHAWNEE MISSION, KS  
 BROWN MD, MICHAEL P, WICHITA, KS  
 BROWN MD, MICHELLE R, WICHITA, KS  
 BROWN MD, RANDALL J, MARYSVILLE, KS  
 BROWN MD, ROBERT A, HUTCHINSON, KS  
 BROWN MD, ROBERT L, WICHITA, KS  
 BROWN MD, ROBERT O, AUBURN, AL  
 BROWN MD, ROBERT WAYNE, SALINA, KS  
 BROWN MD, RONALD C, WICHITA, KS  
 BROWN MD, RONALD L, WICHITA, KS  
 BROWN MD, WILLIAM R, SHAWNEE MISSION, KS  
 BROWN SR MD, VAL J, WICHITA, KS  
 BROWN-SANDERS MD, CAROLINE, LEES SUMMIT, MO  
 BROWNE, CHRISTOPHER A, KANSAS CITY, KS  
 BROWNING MD, JIMMIE L, CLAY CENTER, KS  
 BROWNING MD, WILLIAM H, WICHITA, KS  
 BROXTERMAN MD, STEVEN JOSEPH, SHAWNEE MISSION, KS  
 BROZEK MD, JEFFREY E, GREAT BEND, KS  
 BRUMMETT MD, RICHARD R, KANSAS CITY, MO  
 BRUN MD, MICHAEL E, SHAWNEE MISSION, KS  
 BRUNER JR MD, KENNETH W, TOPEKA, KS  
 BRUNER MD, BRADLEY W, WICHITA, KS  
 BRUNFELDT MD, JOAN KRAUS, LAWRENCE, KS  
 BRUNGARDT MD, BERNARD A, SALINA, KS  
 BRUNGARDT MD, GERARD S, WICHITA, KS  
 BRUNING MD, DANIEL L, SHAWNEE MISSION, KS  
 BRUNING MD, ROGER MARION, SHAWNEE MISSION, KS  
 BRUNNER MD, CHRIS N, WICHITA, KS  
 BRUNO MD, JAMES W, GARDEN CITY, KS  
 BRYAN MD, EMERY C, ERIE, KS  
 BRYANT MD, R KEVIN, WICHITA, KS  
 BUBB MD, STEPHEN K, SHAWNEE MISSION, KS  
 BUBECK MD, RALPH W, WICHITA, KS  
 BUBENIK MD, OLDRICH V, KANSAS CITY, MO  
 BUCK JR MD, BEN H, WICHITA, KS  
 BUCK JR MD, HENRY W, LAWRENCE, KS  
 BUCK JR MD, WILLIAM D, BLUE RAPIDS, KS  
 BUCKMAN MD, MARTIN SPALDING, SHAWNEE MISSION, KS  
 BUDETTI MD, JOSEPH A, N MIAMI BEACH, FL  
 BUHR MD, BRUCE R, WICHITA, KS  
 BULA MD, RALPH E, HAYS, KS  
 BULLER MD, DAVID L, MC PHERSON, KS  
 BURCH MD, CINDY M, SHAWNEE MISSION, KS  
 BURES JR MD, GEORGE J, SHAWNEE MISSION, KS

BURGER MD, PAUL B, SHAWNEE MISSION, KS  
 BURGESSON MD, FRANK G, EMPORIA, KS  
 BURGESS MD, ARTHUR P, LAWRENCE, KS  
 BURGETT, PAUL M, JAMESTOWN, ND  
 BURKE MD, JAMES J, FORT SCOTT, KS  
 BURKE MD, JOSEPH V, ATCHISON, KS  
 BURKE MD, MICHAEL J, WICHITA, KS  
 BURKET JR MD, GEORGE E, KINGMAN, KS  
 BURKMAN MD, REUBEN J, CHANUTE, KS  
 BURNETT D O, MICHAEL E, TOPEKA, KS  
 BURNETT DO, LARRY E, SALINA, KS  
 BURNETT MD, A DEAN, HALSTEAD, KS  
 BURNEY II MD, WILLIAM W, WICHITA, KS  
 BURNEY MD, WILLIAM W, WICHITA, KS  
 BURNS MD, LISA A, COLUMBUS, OH  
 BURNS, BRYAN W, SHAWNEE MISSION, KS  
 BURPEE MD, JAMES F, WICHITA, KS  
 BURRIS, JULIE R, WICHITA, KS  
 BURTNER, JENNIFER J, KANSAS CITY, KS  
 BURTNETT, LAWANA M, KANSAS CITY, KS  
 BUSER MD, WILLIAM D, SHAWNEE MISSION, KS  
 BUSHELL, KRISTEN, OMAHA, NE  
 BUSKIRK MD, JAMES R, TOPEKA, KS  
 BUSTOS MD, JONAS G, HERINGTON, KS  
 BUTCHER MD, THOMAS P, EMPORIA, KS  
 BUTH MD, DENNIS K, WICHITA, KS  
 BUTIN MD, J WALKER, WICHITA, KS  
 BUTLER MD, DORIS C, WICHITA, KS  
 BUTRICK MD, CHARLES W, SHAWNEE MISSION, KS  
 BUTT MD, MUHAMMED, CLAY CENTER, KS  
 BYERS MD, JONELL, SALINA, KS  
 BYRAM MD, MELANIE S, COUNCIL GROVE, KS  
 BYRD D O, CHARLES W, LANSING, KS

## C

CABRERA MD, ALBERT, MC PHERSON, KS  
 CABRERA, ANTHONY, KANSAS CITY, KS  
 CABRERA, ARNOLD R, KANSAS CITY, KS  
 CACHIA MD, RICHARD M, TOPEKA, KS  
 CAEDO MD, CARMELITA D, LIBERAL, KS  
 CALBECK MD, JOHN, GARDEN CITY, KS  
 CALDERON MD, JAIME, KANSAS CITY, KS  
 CALIENDO JR MD, DANIEL J, WICHITA, KS  
 CALKINS MD, JOHN W, KANSAS CITY, KS  
 CALKINS MD, LARRY L, SHAWNEE MISSION, KS  
 CALLAWAY MD, PAUL, WICHITA, KS  
 CAMERON MD, JEFF W, SHAWNEE MISSION, KS  
 CAMPBELL MD, EDWARD G, EMPORIA, KS  
 CAMPBELL MD, LINDA H, SHAWNEE MISSION, KS  
 CAMPBELL MD, WILLIAM H, COFFEYVILLE, KS  
 CAMPION MD, MARY K, WICHITA, KS  
 CANNATA MD, GENE, GREENSBURG, KS  
 CANNON MD, MICHAEL W, WICHITA, KS  
 CAO, THAI H, KANSAS CITY, KS  
 CAPPER MD, STANLEY L, WICHITA, KS  
 CARABETTA MD, VITO J, OLATHE, KS  
 CAREY MD, LARRY J, PARSONS, KS  
 CARLILE MD, WILLIAM E, WICHITA, KS  
 CARLSON MD, EARL V, HAYS, KS  
 CARLSON MD, ERIC A, HUTCHINSON, KS  
 CARLSON MD, MARK D, PITTSBURG, KS  
 CARLSON MD, TERRY S, WICHITA, KS  
 CARLSSON MD, E R, LINDSBORG, KS  
 CARNAHAN MD, ROBERT L, LAWRENCE, KS  
 CARNEY MD, LISA A, TOPEKA, KS  
 CARPENTER MD, PAUL R, KANSAS CITY, KS  
 CARPER MD, IVAN H, GARDEN CITY, KS  
 CARPER MD, OWEN E, NEWTON, KS  
 CARPINO MD, STEPHANIE SHEAR, SHAWNEE MISSION, KS  
 CARR MD, SUSAN L, WICHITA, KS  
 CARREAU MD, ERNEST P, CEDAREDGE, CO  
 CARRIKER MD, CRISTINE G, SHAWNEE MISSION, KS  
 CARRO MD, ALBERTO F, WICHITA, KS  
 CARRO MD, ANTONIO L, MULVANE, KS  
 CARVER MD, RONALD C, ROANOKE, VA  
 CARVER, DEBORAH L, TOPEKA CITY, KS  
 CASADY, ROGER L, WICHITA, KS  
 CASEY MD, JAMES L, HUTCHINSON, KS  
 CASHMAN JR MD, MAURICE R, TOPEKA, KS  
 CASTEEL MD, CHARLES K, SHAWNEE MISSION, KS  
 CASTRISOS MD, JAMES C, WICHITA, KS  
 CATHCART-RAKE MD, WILLIAM F, SALINA, KS  
 CATHEY MD, ROBERT H, MANHATTAN, KS  
 CATTANEO MD, ERNEST A, SHAWNEE MISSION, KS  
 CATTANEO MD, JOHN E, SHAWNEE MISSION, KS  
 CAUBLE MD, WILBUR G, WICHITA, KS  
 CAUGHLIN MD, GERALD MICHAEL, WICHITA, KS  
 CAVANAUGH MD, CLAIR J, GREAT BEND, KS  
 CAVANAUGH MD, TERENCE J, GREAT BEND, KS



CAWLEY MD, LEO P, SCOTTSDALE, AZ  
 CECIL III MD, JOHN, HAYS, KS  
 CEDERLIND MD, CRANSTON JAY, SHAWNEE MISSION, KS  
 CHAFFEE MD, DEAN C, ABILENE, KS  
 CHAFFEE MD, TERRY L, KANSAS CITY, KS  
 CHALIAN MD, ALEXANDER R, KANSAS CITY, KS  
 CHALLA MD, SHEKHAR K, TOPEKA, KS  
 CHAMBERLIN JR MD, CECIL R, PORTLAND, OR  
 CHANEY MD, ERNIE J, WICHITA, KS  
 CHANG MD, C H JOSEPH, KANSAS CITY, KS  
 CHANG MD, CRAIG G, KANSAS CITY, KS  
 CHANG MD, FREDERIC C, WICHITA, KS  
 CHANG MD, PHILEMON D, INDEPENDENCE, KS  
 CHAPMAN D O, THOMAS C, WICHITA, KS  
 CHAPMAN MD, RANDELL B, DERBY, KS  
 CHARD MD, FREDERICK H, WICHITA, KS  
 CHAVES MD, ENRIQUE, KANSAS CITY, KS  
 CHAVEZ MD, CARLOS A, HOLTON, KS  
 CHAVEZ MD, STEVE, WICHITA, KS  
 CHEDIAK MD, ELIAS, LAWRENCE, KS  
 CHEN MD, CHU-CHI, TOPEKA, KS  
 CHEN MD, TAK-MING, TOPEKA, KS  
 CHEN, EDWARD C, KANSAS CITY, KS  
 CHENG MD, MEI Y, WICHITA, KS  
 CHERAY MD, JAMES A, SHAWNEE MISSION, KS  
 CHERNOFF MD, MARY A, KANSAS CITY, KS  
 CHERRY JR MD, ARTHUR C, TOPEKA, KS  
 CHERVEN MD, PHILIP L, WICHITA, KS  
 CHEUNG MD, LAURENCE Y, KANSAS CITY, KS  
 CHHATRE MD, MADHUKAR, KANSAS CITY, KS  
 CHI MD, IL-SUNG, WICHITA, KS  
 CHILLAL MD, PANDURANG P, COFFEYVILLE, KS  
 CHIN MD, TOM D, KANSAS CITY, KS  
 CHIRRA, ANNAPOORNA R, KANSAS CITY, KS  
 CHIU, AMY C, KANSAS CITY, KS  
 CHO MD, CHENG T, KANSAS CITY, KS  
 CHO MD, SECHIN, WICHITA, KS  
 CHOI MD, PHILIP S, PARSONS, KS  
 CHONG MD, SUNG P, WICHITA, KS  
 CHONKO MD, ARNOLD M, KANSAS CITY, KS  
 CHOPRA MD, RAMAN, WICHITA, KS  
 CHOTIMONGKOL MD, ANUPONG, DODGE CITY, KS  
 CHOW MD, STANLEY Y, FORT SCOTT, KS  
 CHOY MD, JAMES K L, SUN CITY WEST, AZ  
 CHRISTENSEN MD, ERIC C, KANSAS CITY, MO  
 CHRISTENSEN MD, SHANE R, KANSAS CITY, MO  
 CHRISTIAN MD, MARY, WICHITA, KS  
 CHRISTMAN JR MD, CARL, WICHITA, KS  
 CHRONISTER MD, BERT, NEODESHA, KS  
 CHUNG MD, JOHN J, LINCOLN, NE  
 CISKEY MD, WILLIAM J, LAWRENCE, KS  
 CLAASSEN MD, MILTON A, NEWTON, KS  
 CLAASSEN MD, SAMUEL D, MC PHERSON, KS  
 CLAIBORNE MD, RICHARD A, WICHITA, KS  
 CLARK MD, COURTNEY, WICHITA, KS  
 CLARK MD, CRAIG N, TOPEKA, KS  
 CLARK MD, DAVID H, SALINA, KS  
 CLARK MD, LAURENCE A, WAMEGO, KS  
 CLARK MD, ROBERT G, WICHITA, KS  
 CLAWSON MD, D KAY, KANSAS CITY, KS  
 CLEMENTS, THAD A, KANSAS CITY, KS  
 CLIFTON MD, H DAVID, WICHITA, KS  
 CLINE MD, BYRON W, WICHITA, KS  
 CLOUGH, JOHN A, KANSAS CITY, KS  
 COALE MD, LLOYD H, KANSAS CITY, KS  
 COATES, SCOTT D, CHANUTE, KS  
 COATS MD, BARBARA S, WICHITA, KS  
 COBB MD, JEANNINE M, WICHITA, KS  
 COBB MD, LESLIE H, MULVANE, KS  
 COCHRAN MD, KIMBERLY A, OLATHE, KS  
 COFFEY MD, CHARLES R, WICHITA, KS  
 COHEN MD, JUSTIN T, WICHITA, KS  
 COHEN MD, LOUIS, TOPEKA, KS  
 COHEN MD, ROBERT A, SHAWNEE MISSION, KS  
 COHLMIA MD, JERRY B, WICHITA, KS  
 COHLMIA MD, SAM N, WICHITA, KS  
 COKER MD, W LAURENCE, TOPEKA, KS  
 COLE MD, WARD M, WELLINGTON, KS  
 COLEMAN MD, GARY, ABILENE, KS  
 COLEMAN MD, ROBERT L, SHAWNEE MISSION, KS  
 COLEMAN MD, THOMAS J, WICHITA, KS  
 COLEY D O, MICHAEL E, EL DORADO, KS  
 COLIP MD, FLOYD M, NORTON, KS  
 COLIP, MICHAEL F, KANSAS CITY, KS  
 COLLIER MD, HAROLD W, WICHITA, KS  
 COLLIER MD, WILLIAM J, MC PHERSON, KS  
 COLLINS MD, DEAN T, TOPEKA, KS  
 COLLINS MD, EDWARD J, TOPEKA, KS  
 COLLINS MD, JEFFREY S, ROCKVILLE, MD  
 COLYER MD, JEFFREY W, SHAWNEE MISSION, KS  
 CONANT MD, FERRILL R, SMITH CENTER, KS

CONANT MD, MERRILL, DODGE CITY, KS  
 CONARD MD, CLAIR C, DODGE CITY, KS  
 CONCANNON MD, CRAIG A, BELOIT, KS  
 CONCEPCION JR MD, EUGENIO S, WICHITA, KS  
 CONNER MD, BRIAN, SALINA, KS  
 CONNOR MD, CAROL S, LEAVENWORTH, KS  
 CONOVER MD, MARGARET A, TOPEKA, KS  
 CONRARDY MD, PETER A, WICHITA, KS  
 CONROW MD, JEFFREY K, TOPEKA, KS  
 CONROY MD, ROBERT W, TOPEKA, KS  
 COOK D O, RANDY A, HAYS, KS  
 COOK MD, D RAY, WICHITA, KS  
 COOK MD, G EDWARD, WICHITA, KS  
 COOK MD, KAROLYN M, LARNED, KS  
 COOK MD, THEODORE R, LARNED, KS  
 COOKE, BRIAN D, KANSAS CITY, KS  
 COOLEY MD, DAVID A, SHAWNEE MISSION, KS  
 COOLEY MD, DENNIS M, TOPEKA, KS  
 COOLIDGE MD, THOMAS T, TOPEKA, KS  
 COOMER MD, TYLER E, PITTSBURG, KS  
 COON MD, STEPHEN D, TOPEKA, KS  
 COONROD MD, SCOTT A, MANHATTAN, KS  
 COOPER MD, ARTHUR E, NORTON, KS  
 COOPER MD, CATHY N, EL DORADO, KS  
 COOPER MD, JACK R, SHAWNEE MISSION, KS  
 COOPER MD, JAMES L, SALINA, KS  
 COOPER MD, LEO F, DREXEL, MO  
 COOPER MD, M KENT, WICHITA, KS  
 COPPLE JR MD, HAL E, TOPEKA, KS  
 CORDELL MD, LARRY D, SHAWNEE MISSION, KS  
 CORDER MD, ROBERT L, MESA, AZ  
 CORNELL MD, EARL G, PARSONS, KS  
 COSSETTE MD, JERROLD E, SALINA, KS  
 COSSMAN MD, F PRICE, WICHITA, KS  
 COSTA MD, JOHN A, LAWRENCE, KS  
 COSTELLO MD, J W, PRATT, KS  
 COTTON MD, ROBERT T, TOPEKA, KS  
 COULON MD, GERARD, TOPEKA, KS  
 COULTER D O, THAYNE A, CLYDE, KS  
 COULTER MD, HENRY F, SHAWNEE MISSION, KS  
 COULTER MD, THOMAS B, SHAWNEE MISSION, KS  
 COVERT MD, THOMAS J, SALINA, KS  
 COVILLO D O, FREDERICK V, KANSAS CITY, KS  
 COWLEY MD, CARLOS A, WICHITA, KS  
 COX D O, DEON M, CHICAGO, IL  
 COX III MD, IRA L, KANSAS CITY, KS  
 COX JR MD, IRA, SHAWNEE MISSION, KS  
 COX MD, GLENDON G, SHAWNEE MISSION, KS  
 COX MD, REAGAN M, SHAWNEE MISSION, KS  
 COX MD, ROBERT H, HAYS, KS  
 COX MD, STEVEN W, GRAND RAPIDS, MI  
 COYLE-DANIEL MD, DEBRA S, SHAWNEE MISSION, KS  
 CRADDOCK MD, TERRY M, WICHITA, KS  
 CRAIG MD, CHARLES C, NEWTON, KS  
 CRAIG MD, THOMAS A, JUNCTION CITY, KS  
 CRAM JR MD, OLE R, LARNED, KS  
 CRAM MD, ERNEST R, ST FRANCIS, KS  
 CRANE MD, CHARLES H, MANHATTAN, KS  
 CRANE MD, DAVID D, WICHITA, KS  
 CRARY MD, JOHN E, TOPEKA, KS  
 CREDITOR MD, MORTON C, KANSAS CITY, KS  
 CRISP-LINDGREN MD, NAOMA, WICHITA, KS  
 CRONIN MD, DONALD J, WICHITA, KS  
 CROOKER MD, CHRISTOPHER S, SHAWNEE MISSION, KS  
 CROSKELL MD, SARAH E, SALT LAKE CITY, UT  
 CROSS LOCKE, KAREN K, ALTOONA, WI  
 CROUCH MD, STEVEN W, TOPEKA, KS  
 CROUCH MD, WILLIAM H, TOPEKA, KS  
 CROW MD, ERNEST W, WICHITA, KS  
 CROWLEY MD, EDWARD X, WICHITA, KS  
 CROWNS, KENDALL V, KANSAS CITY, KS  
 CULLAN MD, GEORGE E, HUTCHINSON, KS  
 CULLAN MD, SAMUEL K, KANSAS CITY, MO  
 CULP MD, LOUIS M, KANSAS CITY, KS  
 CULTRON MD, FRANK T, SALINA, KS  
 CULVER D O, SONYA KATHERINE, ERIE, KS  
 CULVER MD, WARREN T, LAWRENCE, KS  
 CUMMINGS MD, RICHARD J, WICHITA, KS  
 CUPPAGE MD, FRANCIS E, KANSAS CITY, KS  
 CURTIS MD, JEFFERY L, TOPEKA, KS  
 CURTIS MD, STEPHEN L, GAINSVILLE, FL  
 CVETKOVICH MD, LORNA L, WICHITA, KS  
 CZAPANSKY-BEILMAN MD, DESIREE, WICHITA, KS

## D

D'SOUZA MD, BISMARCK C, SALINA, KS  
 DADKHAH MD, NADER, KANSAS CITY, KS  
 DAHL MD, DAVID C, KANSAS CITY, KS

DAILY MD, DONNA K, KANSAS CITY, KS  
 DAIZ MD, ANTONIO S, PARSONS, KS  
 DAKHIL MD, SHAKER R, WICHITA, KS  
 DAMMON JR MD, JAMES W, TOPEKA, KS  
 DANBY MD, JOHN H, WICHITA, KS  
 DANIELS MD, HERBERT A, KANSAS CITY, KS  
 DANIELS MD, ROBERT M, VALLEY CENTER, KS  
 DANIELS PETRAKIS, PATRICIA M, KANSAS CITY, KS  
 DARABANT MD, TITUS E, JUNCTION CITY, KS  
 DARGER MD, KATHERINE, WICHITA, KS  
 DARRAH MD, JOY N, WICHITA, KS  
 DAS MD, KRISHNA L, GARDEN CITY, KS  
 DATTEL MD, FREDERICK S, SHAWNEE MISSION, KS  
 DATTILO MD, RAYMOND, TOPEKA, KS  
 DAUGHETY MD, TED W, TOPEKA, KS  
 DAVIA MD, JAMES E, SHAWNEE MISSION, KS  
 DAVIDSON MD, RANDY G, WICHITA, KS  
 DAVIES, JONATHAN W R, SHAWNEE MISSION, KS  
 DAVIS MD, CHESTER R, TOPEKA, KS  
 DAVIS MD, CHRISTOPHER G, KANSAS CITY, KS  
 DAVIS MD, DAVID R, EMPORIA, KS  
 DAVIS MD, PAUL H, WICHITA, KS  
 DAVIS MD, RICHARD E, KANSAS CITY, MO  
 DAVIS MD, RONALD B, WICHITA, KS  
 DAVIS MD, W D, HUTCHINSON, KS  
 DAVIS, KENT S, KANSAS CITY, KS  
 DAVISON MD, JOE D, WICHITA, KS  
 DAY MD, HOWARD, WICHITA, KS  
 DE ARMOND MD, LYNDA B, ARKANSAS CITY, KS  
 DE BAKKER MD, JAN B, WICHITA, KS  
 DE BOISE MD, DOUGLAS, WICHITA, KS  
 DE HART MD, ARTHUR DONIVA, WICHITA, KS  
 DE LA PEDRAJA MD, JORGE L, MIAMI, FL  
 DE SILVA MD, MAHASEN T, TOPEKA, KS  
 DE WITT MD, BARBARA L, WICHITA, KS  
 DEAN MD, DAVID P, WICHITA, KS  
 DECENA MD, IMMACULADA M, LEAVENWORTH, KS  
 DECKER MD, DONALD D, HALSTEAD, KS  
 DEFREECE MD, DANIEL J, SHAWNEE MISSION, KS  
 DEGNER MD, JAMES C, WICHITA, KS  
 DEGNER MD, REX A, GREAT BEND, KS  
 DEITZ MD, MICHAEL R, SHAWNEE MISSION, KS  
 DELCORE MD, ROMANO, KANSAS CITY, KS  
 DELGADO MD, SERGIO, TOPEKA, KS  
 DELGADO MD, SERGIO V, TOPEKA, KS  
 DELMORE MD, JAMES E, WICHITA, KS  
 DELPHIA MD, ROBERT E, OLATHE, KS  
 DEMCZUK MD, ROXOLANA J, SHAWNEE MISSION, KS  
 DEMOSS MD, ELEANOR P, WICHITA, KS  
 DEMOTT MD, WAYNE R, KANSAS CITY, KS  
 DENISON MD, TERRY R, SHAWNEE MISSION, KS  
 DENNETT, MIKE A, KANSAS CITY, KS  
 DENNING MD, DALE P, LAWRENCE, KS  
 DENNING MD, PATRICIA M, LAWRENCE, KS  
 DENNING, DIANA F, WICHITA, KS  
 DENNIS MD, DAVID T, SALINA, KS  
 DENNIS MD, MICHAEL W, SHAWNEE MISSION, KS  
 DEPENDBUSCH MD, FRANCIS L, HUTCHINSON, KS  
 DEPEW MD, CLIFFORD S, WICHITA, KS  
 DERRINGTON MD, KENNETH L, SHAWNEE MISSION, KS  
 DETURK MD, DWAYNE L, SALINA, KS  
 DEVINE MD, JOHN P, MANHATTAN, KS  
 DEVINE, ROBERT P, KANSAS CITY, KS  
 DEVINS MD, GEORGE S, KANSAS CITY, MO  
 DEVOSS MD, MARK R, WICHITA, KS  
 DEWITT MD, PETER, WICHITA, KS  
 DIALLO MD, GASTON I, LEAVENWORTH, KS  
 DIANO, MARCEL L, KANSAS CITY, KS  
 DICK JR MD, HENRY J, EMPORIA, KS  
 DICK MD, WILLIS G, IOLA, KS  
 DICKEY, SUSAN D, KANSAS CITY, KS  
 DICKINSON MD, CHARLES R, COFFEYVILLE, KS  
 DICKINSON MD, JAMES M, KANSAS CITY, MO  
 DIEHL MD, ANTONI M, SHAWNEE MISSION, KS  
 DIENER MD, CLAYTON H, HESSTON, KS  
 DILLARD MD, SANDY R, WICHITA, KS  
 DILLON MD, STEVEN C, LAWRENCE, KS  
 DILLON MD, WILLIAM L, PARSONS, KS  
 DINSDALE MD, ROBERT C, LAWRENCE, KS  
 DOAN MD, TRINAH, WICHITA, KS  
 DOBBS MD, MICHAEL E, HUTCHINSON, KS  
 DOBRATZ MD, ROBERT A, BELOIT, KS  
 DOCKHORN MD, ROBERT J, SHAWNEE MISSION, KS  
 DOEBLIN MD, P LAURENCE, WICHITA, KS  
 DOERRY MD, KAREN E, GREAT BEND, KS  
 DOLAN JR MD, PHILIP JARVIS, WICHITA, KS  
 DOMME JR MD, SYLVESTER A, WICHITA, KS  
 DONATELLE MD, EDWARD P, EDINA, MN  
 DONEPUDI MD, RAO S, TOPEKA, KS  
 DONLEY MD, JAMES L, SHAWNEE MISSION, KS  
 DONNELL MD, JAMES M, WICHITA, KS



DOORNBOS MD, DANIEL C, WICHITA, KS  
DORN MD, CURTIS C, WICHITA, KS  
DORSCH MD, JOHN N, WICHITA, KS  
DORZAB MD, LINDA L, SHAWNEE MISSION, KS  
DOSS MD, J RICHARD, HAYS, KS  
DOUBEK MD, DEBRA L, MANHATTAN, KS  
DOUBEK MD, HERBERT D, BELLEVILLE, KS  
DOUGHERTY JR MD, THOMAS M, GLADSTONE, MO  
DOUTHIT MD, DOUGLAS D, WICHITA, KS  
DOWLATSHAHI, MORTEZA, SHAWNEE MISSION, KS  
DOWNING MD, GREGORY C, WICHITA, KS  
DRAEMEL MD, H RICHARD, SALINA, KS  
DRAHOTA MD, LAWRENCE J, SHAWNEE MISSION, KS  
DRAKE MD, CYNTHIA K, SHAWNEE MISSION, KS  
DRAKE MD, DOUGLAS J, BELOIT, KS  
DRAKE MD, RALPH L, WICHITA, KS  
DRASIN MD, DENA K, SHAWNEE MISSION, KS  
DRAZEK MD, GEORGE, WICHITA, KS  
DRAZEK MD, JANE K, WICHITA, KS  
DREES, CHRISTINE A, KANSAS CITY, KS  
DREHER MD, HENRY S, SALINA, KS  
DREILING MD, ROGER J, SHAWNEE MISSION, KS  
DREVETS MD, CURTIS C, WICHITA, KS  
DU PUIS MD, JOHN G, WICHITA, KS  
DUCKETT II MD, THOMAS G, SHAWNEE MISSION, KS  
DUCKETT MD, THOMAS G, HIAWATHA, KS  
DUDGEON MD, MAUREEN, SHAWNEE MISSION, KS  
DUGAN MD, DAVID L, WICHITA, KS  
DUGGINS MD, MAURICE L, WICHITA, KS  
DUICK MD, GREGORY, WICHITA, KS  
DUJOVNE MD, CARLOS A, KANSAS CITY, KS  
DULIN MD, JOSE I, KANSAS CITY, KS  
DUNCAN MD, KIRK A, SHAWNEE MISSION, KS  
DUNDEE MD, JOHN T, OTTAWA, KS  
DUNIVEN MD, PHILIP L, TOPEKA, KS  
DUNLAP MD, PATRICK S, FORT SCOTT, KS  
DUNLAP MD, RICHARD L, LAWRENCE, KS  
DUNN MD, DANIEL R, SCOTT CITY, KS  
DUNN MD, MARVIN I, KANSAS CITY, KS  
DUNSHEE MD, CARLYLE M, FORT SCOTT, KS  
DUNSHEE, CARLYLE M, KANSAS CITY, KS  
DURANO MD, ANTONIO C, WICHITA, KS  
DURHAM MD, JANE, SAN DIEGO, CA  
DURKEE MD, WILLIAM R, MANHATTAN, KS  
DURST JR MD, ROBERT D, TOPEKA, KS  
DUTTON MD, KARRI D, INDEPENDENCE, KS  
DUYSAK MD, SAMI, LEAVENWORTH, KS  
DYCK MD, ERIC LEE, SHAWNEE MISSION, KS  
DYCK MD, GEORGE, WICHITA, KS  
DYE MD, DIANNA P, PHOENIX, AZ  
DYE MD, JAMES D, WICHITA, KS  
DYSART MD, JACK C, STERLING, KS

## E

EASTES MD, GARY DEAN, HALSTEAD, KS  
EATON MD, EDWARD L, TOPEKA, KS  
EATON MD, GLEN E, SALINA, KS  
EATON MD, LESLIE F, SALINA, KS  
EBELING MD, JOHN D, TOPEKA, KS  
ECK HAND MD, MARIE M, SHAWNEE MISSION, KS  
ECKART MD, DE MERLE E, HUTCHINSON, KS  
ECKERT MD, WILLIAM G, WICHITA, KS  
ECKERT, CYNTHIA S, KANSAS CITY, MO  
ECLAVEA, ANTHONY, LAWRENCE, KS  
EDDS MD, BRECK A, TOPEKA, KS  
EDDY MD, VICTOR M, HAYS, KS  
EDEL, THOMAS A, SAN ANTONIO, TX  
EDMONDS JR MD, JOSEPH L, SHAWNEE MISSION, KS  
EDMONDS MD, MARTA J, GREAT BEND, KS  
EDWARDS MD, DAVID J, EMPORIA, KS  
EDWARDS MD, MANIS C, WICHITA, KS  
EDWARDS MD, SHELLEY J, KANSAS CITY, MO  
EDWARDS-GARLAND MD, SHELLEY J, SHAWNEE MISSION, KS  
EGBERT MD, ANNE M, WICHITA, KS  
EGELHOF MD, RICHARD H, WICHITA, KS  
EICHHORN MD, FRANK D, GARDEN CITY, KS  
EINSPAHR MD, DAVID E, TOPEKA, KS  
EKENGREN MD, FRANCIE H, WICHITA, KS  
EKENGREN MD, HUGH I, WICHITA, KS  
EL-GHAZZAWY MD, ADEL G, ST LOUIS, MO  
ELANGOVAN MD, SUDHA, WICHITA, KS  
ELCOCK MD, DAVID G, SHAWNEE MISSION, KS  
ELDER MD, D MIKEL, TOPEKA, KS  
ELLIS MD, S CHRISTOPHER, SHAWNEE MISSION, KS  
ELLIS MD, BOBBY J, INDEPENDENCE, KS

ELLIS MD, HOWARD D, SHAWNEE MISSION, KS  
ELLIS MD, LAVELLE A, WICHITA, KS  
ELLISON MD, PAUL D, SALINA, KS  
ELSON MD, BRUCE C, WICHITA, KS  
EMAMI MD, ABBAS, KANSAS CITY, KS  
EMMOTT MD, DAVID F, SHAWNEE MISSION, KS  
EMORY MD, JEFF, KANSAS CITY, KS  
EMPSON MD, CHARLES L, INDEPENDENCE, KS  
ENDERS MD, WRAY, SHAWNEE MISSION, KS  
ENGELKEN MD, SUSAN F, ONAGA, KS  
ENGEN MD, PHIL L, KANSAS CITY, KS  
ENNS MD, EUGENE K, NEWTON, KS  
ENNS MD, JAMES H, LAKE HAVASU CITY, AZ  
ENOCH MD, ROLLAND K, WICHITA, KS  
ENS MD, GERHARD GEORGE, HILLSBORO, KS  
ENSROTH MD, KENNETH A, TOPEKA, KS  
EPLÉE MD, JOHN R, ATCHISON, KS  
EPP MD, GALEN W, OLATHE, KS  
ERENBERG MD, ALLEN, KANSAS CITY, KS  
ERICKSON MD, CLARENCE W, PITTSBURG, KS  
ERICKSON MD, KENT E, CLAY CENTER, KS  
ERNST MD, TARI MAE, WICHITA, KS  
ESCH MD, JOHN G, ISLAND PARK, ID  
ESRIG D O, HAROLD L, SHAWNEE MISSION, KS  
ESTEP MD, THOMAS H, WICHITA, KS  
ESTES MD, NORMAN C, KANSAS CITY, KS  
ESTIVO D O, MICHAEL P, WICHITA, KS  
ESTRADA MD, EDMUNDO C, LIBERAL, KS  
ETZENHOUSER III MD, RUSSELL D, SHAWNEE MISSION, KS  
EVANS MD, CAROL ANN, SHAWNEE MISSION, KS  
EVANS MD, GENE H, WICHITA, KS  
EVANS MD, JOHN F, TOPEKA, KS  
EVANS MD, ROGER W, WICHITA, KS  
EVANS MD, WILLIAM R, GREAT BEND, KS  
EVANS, KIRSTEN E, KANSAS CITY, KS  
EWING, WENDY C, KANSAS CITY, KS  
EYSTER MD, ROBERT L, WICHITA, KS

## F

FAERBER MD, THOMAS H, SHAWNEE MISSION, KS  
FAHRENHOLTZ MD, RANDALL K, WICHITA, KS  
FAILING MD, TRENT L, KANSAS CITY, MO  
FAIRCHILD MD, RICHARD S, TOPEKA, KS  
FAJARDO MD, JEFFREY, WICHITA, KS  
FALTER JR MD, RICHARD T, KANSAS CITY, MO  
FALTER MD, RICHARD T, HUTCHINSON, KS  
FARHA MD, AYHAM J, WICHITA, KS  
FARHA MD, GEORGE J, WICHITA, KS  
FARHA MD, S JIM, WICHITA, KS  
FARHAT MD, ASSEM Z, WICHITA, KS  
FARLEY MD, JAMES A, WICHITA, KS  
FARMER III D.O., F J, STAFFORD, KS  
FAST D O, JAMES I, HUTCHINSON, KS  
FAST MD, GARY A, OSKALOOSA, IA  
FAST MD, W SPENCER, ATCHISON, KS  
FAULK, L CHRISTINE, WICHITA, KS  
FEAGAN MD, JERRY H, TOPEKA, KS  
FEAREY MD, ALAN J, WICHITA, KS  
FEDIDA MD, ALAIN A, WICHITA, KS  
FEDOR MD, BARBARA, HALSTEAD, KS  
FEEHAN MD, JOHN M, OLATHE, KS  
FEIFAREK MD, MICHAEL J, TOPEKA, KS  
FELDMEYER MD, SEELEY T, MEADE, KS  
FELT MD, SAMUEL E, WICHITA, KS  
FENT II MD, LEE S, NEWTON, KS  
FENT MD, LEE S, NEWTON, KS  
FENTON MD, ROBERT M, GARDEN CITY, KS  
FERGUSON DO, ELAINE L, SALINA, KS  
FERGUSON MD, DIANE M, KANSAS CITY, MO  
FERNANDEZ MD, HECTOR O, WICHITA, KS  
FERNANDEZ MD, LUIS A, TOPEKA, KS  
FERREE MD, RICHARD A, MC PHERSON, KS  
FERRIS MD, BRUCE G, WICHITA, KS  
FESEN MD, MARK R, HUTCHINSON, KS  
FEUILLE JR MD, EDMOND G, WICHITA, KS  
FIELD MD, RICHARD A, TOPEKA, KS  
FIELD-KRESIE MD, DEBBIE A, TOPEKA, KS  
FIELD, CHARLES E, KANSAS CITY, KS  
FIELDS D O, STEPHEN, WICHITA, KS  
FIELDS MD, GALEN W, MC PHERSON, KS  
FIESER MD, CARL W, GREAT BEND, KS  
FIKE MD, EDGAR A, WICHITA, KS  
FINK MD, ABRAHAM A, FORT LAUDERDALE, FL  
FINLEY MD, BRENT E, SHAWNEE MISSION, KS  
FISCHER MD, REX R, MANHATTAN, KS  
FISCHER, KENNY A, KANSAS CITY, KS  
FISHER MD, JAMES B, COLORADO SPRINGS, CO

FISHER MD, KAY L, REDLANDS, CA  
FISHER MD, RAY F, WICHITA, KS  
FITZGERALD DO, DAVID J, WICHITA, KS  
FITZGERALD MD, DAVID A, TOPEKA, KS  
FITZGERALD MD, EDWARD J, WICHITA, KS  
FITZIG MD, SANFORD, WICHITA, KS  
FITZPATRICK HARRIS MD, PAMELA, SHAWNEE MISSION, KS  
FITZSIMMONS MD, CURTIS J, KANSAS CITY, KS  
FLANDERS MD, H ALDEN, MC ALLEN, TX  
FLANNER MD, FRANK R, LEAVENWORTH, KS  
FLATT MD, DAVID R, TOPEKA, KS  
FLEMMING, DONNA J, WICHITA, KS  
FLESKE MD, LEONARD T, GREAT BEND, KS  
FLOERSCH MD, HUBERT M, LAWRENCE, KS  
FLOREZ MD, JAMES P, KANSAS CITY, KS  
FLOWERS JR MD, CLELL B, WICHITA, KS  
FORD MD, CHARLES R, WICHITA, KS  
FORDYCE MD, NORMAN, EMPORIA, KS  
FORET MD, JOHN D, KANSAS CITY, KS  
FORRED MD, WALTER, WICHITA, KS  
FORSTER MD, JAMESON, KANSAS CITY, KS  
FORTIN MD, DAVID, LAWRENCE, KS  
FOSS MD, DANIEL C, HUTCHINSON, KS  
FOWLER MD, DENNIS L, OLATHE, KS  
FOWLER MD, ROBERT J, WICHITA, KS  
FOWLER MD, WAYNE L, CONCORDIA, KS  
FOX MD, DEANNA K, KANSAS CITY, KS  
FRANCIS MD, NORTON L, ALBUQUERQUE, NM  
FRANCISCO MD, CLARENCE L, SHAWNEE MISSION, KS  
FRANCISCO MD, DAN A, WICHITA, KS  
FRANCISCO MD, EDGARDO, HORTON, KS  
FRANCISCO MD, LINDA L, WICHITA, KS  
FRANCISCO MD, W DAVID, KANSAS CITY, KS  
FRANK MD, KENNETH J, SHAWNEE MISSION, KS  
FRANK MD, MARY S, TOPEKA, KS  
FRANKEL MD, SCOTT J, SHAWNEE MISSION, KS  
FRANKLIN JR MD, BENJAMIN A, TOPEKA, KS  
FRANSEN MD, PAUL H, HALSTEAD, KS  
FREDRICKSON MD, DAVID P, WICHITA, KS  
FREDRICKSON MD, DUANE E, LINDSBORG, KS  
FREDRICKSON MD, ERIC R, CLEVELAND, OH  
FREDRICKSON, DANN J, KANSAS CITY, KS  
FREEBORN JR MD, WARREN S, CONCORDIA, KS  
FREEMAN MD, F GILES, PRATT, KS  
FREEMAN MD, FRED A, MANHATTAN, KS  
FREEMAN MD, RAYMOND S, SALINA, KS  
FRENCH MD, JAMES E, WICHITA, KS  
FRENCH MD, JEROME E, WICHITA, KS  
FRENKEL MD, JACOB K, SANTA FE, NM  
FRESE MD, DANIEL R, COUNCIL GROVE, KS  
FREUND MD, WILLIAM L, TOPEKA, KS  
FRIESEN MD, DALE, LAWRENCE, KS  
FRIESEN MD, DOUGLAS A, HUTCHINSON, KS  
FRIESEN MD, ORLANDO J, NORTH NEWTON, KS  
FRIESEN MD, RICK W, PRATT, KS  
FRIESEN MD, STANLEY R, SHAWNEE MISSION, KS  
FRISKEL, ERIC D, SHAWNEE MISSION, KS  
FRITZ MD, DAVID P, INDIANAPOLIS, IN  
FRITZ MD, MARK H, WICHITA, KS  
FRITZEMEIER MD, WILLIAM H, WICHITA, KS  
FROMER MD, JOEL, WICHITA, KS  
FROMM MD, ARTHUR H, WICHITA, KS  
FRUECHTING MD, LYNNE A, NEWTON, KS  
FRY MD, LUTHER L, GARDEN CITY, KS  
FRYE MD, DARRIN L, WICHITA, KS  
FRYE MD, DOUGLAS D, TOPEKA, KS  
FUGATE MD, CARL L, BELOIT, KS  
FULBRIGHT MD, THOMAS W, LAWRENCE, KS  
FULLEN MD, JERYL G, SALINA, KS  
FULTON MD, JOHN K, WICHITA, KS  
FUNK MD, EDWARD D, EUDORA, KS

## G

GABBARD MD, GLEN O, TOPEKA, KS  
GABRIELLI JR MD, WILLIAM F, SHAWNEE MISSION, KS  
GAGE MD, BETSE M, SHAWNEE MISSION, KS  
GAGNON MD, SUZANNE, WICHITA, KS  
GALICIA MD, JOSEPH P, WICHITA, KS  
GALLEHUGH MD, KEITH W, SHAWNEE MISSION, KS  
GALVAN MD, ALONSO, WICHITA, KS  
GANDHI MD, SHANTIKUMAR K, TOPEKA, KS  
GANS MD, FREDERICK A, SALINA, KS  
GARCIA MD, GOULD C, EMPORIA, KS  
GARCIA MD, GUILLERMO O, DODGE CITY, KS  
GARCIA-FERRER MD, FRANCISCO, SHAWNEE



MISSION, KS  
 GARD MD, RAYMOND F, BROOKINGS, OR  
 GARDNER MD, J DOUGLAS, TOPEKA, KS  
 GARDNER MD, JAMES D, MANHATTAN, KS  
 GARDNER MD, JARED J, WICHITA, KS  
 GARLOW MD, WILLIAM B, SALINA, KS  
 GARNER, STEVEN A, WICHITA, KS  
 GARNER, WILLIAM J, SHAWNEE MISSION, KS  
 GAST MD, KRIS, KANSAS CITY, KS  
 GATSCHET MD, TIMOTHY P, HAYS, KS  
 GAUGHAN EXEC DIR, CAROLYN N, WICHITA, KS  
 GAUGHAN MD, MICHAEL J, SHAWNEE MISSION, KS  
 GAUGHAN MD, REBECCA N, OLATHE, KS  
 GAY MD, JOHN D, TOPEKA, KS  
 GEHRT MD, EARL B, CHANUTE, KS  
 GEIS MD, DICK A, TOPEKA, KS  
 GEISLER MD, STEVEN R, WICHITA, KS  
 GEIST MD, MICHAEL J, TOPEKA, KS  
 GEITZ MD, JAMES M, EMPORIA, KS  
 GEMPERLI MD, AMY W, SHAWNEE MISSION, KS  
 GENDEL MD, JOSEPH E, TOPEKA, KS  
 GENILO MD, CELESTE A, WICHITA, KS  
 GENTRY MD, JAMES H, DENVER, CO  
 GEORGE MD, EARL F, WICHITA, KS  
 GERJARUSAK MD, PRAPAS, SHAWNEE MISSION, KS  
 GERWICK MD, CHARLES L, SHAWNEE MISSION, KS  
 GETTLER MD, DEAN T, FORT SCOTT, KS  
 GIBBONS D O, DEBBIE R, WICHITA, KS  
 GIBBONS MD, ROBERT T, SHAWNEE MISSION, KS  
 GIBSON, STEPHANIE L, KANSAS CITY, KS  
 GIESSEL MD, MICHAEL D, TOPEKA, KS  
 GILBERT II MD, JOHN H, GARDEN CITY, KS  
 GILHOUSEN MD, FREDERIC M, KANSAS CITY, KS  
 GILLAN JR MD, DALE E, HUTCHINSON, KS  
 GILLEN MD, BILLY A, SHAWNEE MISSION, KS  
 GILLENWATER MD, DAVID T, GREAT BEND, KS  
 GILLES MD, HELEN M, LAWRENCE, KS  
 GILLET MD, MARK L, SHAWNEE MISSION, KS  
 GILMARTIN MD, RICHARD C, WICHITA, KS  
 GIMPLE MD, KENNETH, TOPEKA, KS  
 GINAVAN MD, DUANE A, EMPORIA, KS  
 GIROUX MD, GUY M, TOPEKA, KS  
 GISH MD, DAVID L, WICHITA, KS  
 GLEASON MD, DOUGLAS S, INDIANAPOLIS, IN  
 GLEASON MD, JIMMIE A, TOPEKA, KS  
 GLENN MD, JAMES N, EMPORIA, KS  
 GLENN MD, LYLE G, PROTECTION, KS  
 GLOVER II MD, RICHARD M, NEWTON, KS  
 GLOVER MD, RICHARD M, NEWTON, KS  
 GLUCK MD, JAMES L, WICHITA, KS  
 GNAU MD, FREDRIC B, HALSTEAD, KS  
 GOBAR MD, IBRAHIM A, PITTSBURG, KS  
 GODFREY MD, WILLIAM A, KANSAS CITY, MO  
 GODWIN MD, PHILLIP A, LAWRENCE, KS  
 GOERING MD, DONALD D, COLDWATER, KS  
 GOERING MD, EMIL L, TOPEKA, KS  
 GOERING MD, RANDALL V, WICHITA, KS  
 GOERTZ MD, LEO R, SHAWNEE MISSION, KS  
 GOINS MD, BONNIE K, SHAWNEE MISSION, KS  
 GOLDBERG MD, HERBERT R, WICHITA, KS  
 GOLDBERG MD, JOSEPH P, SHAWNEE MISSION, KS  
 GOLDBERG, MARCEL A, SHAWNEE MISSION, KS  
 GOLDSTEIN MD, GERALD L, SHAWNEE MISSION, KS  
 GOLDSTEIN MD, JOYCE, SHAWNEE MISSION, KS  
 GOLLIER II MD, ROBERT A, OTTAWA, KS  
 GOLLUB MD, STEVEN B, KANSAS CITY, KS  
 GOMETZ MD, MODESTO S, PITTSBURG, KS  
 GOMEZ MD, FRANCISCO, SHAWNEE MISSION, KS  
 GONZALEZ MD, HIRAM, WICHITA, KS  
 GONZALEZ MD, IRIS P, AKRON, OH  
 GOOD D O, FREDERICK C, WICHITA, KS  
 GOOD MD, JAMES T, FORT SCOTT, KS  
 GOOD MD, WENDELL LISLE, SHAWNEE MISSION, KS  
 GOODPASTURE MD, HEWITT C, WICHITA, KS  
 GOODWIN MD, JOHN A, SHAWNEE MISSION, KS  
 GOODWIN MD, MARY K, GODDARD, KS  
 GORACKE MD, DOUGLAS S, ATCHISON, KS  
 GORDON MD, JAMES R, WICHITA, KS  
 GOTO MD, HIROSHI, KANSAS CITY, KS  
 GOTTLIEB D O, SHERYL L, WICHITA, KS  
 GOYLE MD, KRISHAN K, WICHITA, KS  
 GOYLE MD, VIMAL, WICHITA, KS  
 GRABAU MD, GUY M, WICHITA, KS  
 GRACE MD, CAROL A, SHAWNEE MISSION, KS  
 GRADY D O, TIMOTHY P, WICHITA, KS  
 GRAESSLE D O, DONNA M, SHAWNEE MISSION, KS  
 GRAHAM JR MD, ARNOLD R, CHICAGO, IL  
 GRAHAM MD, BRUCE D, SHAWNEE MISSION, KS  
 GRAHAM MD, J ROBERT, KANSAS CITY, MO  
 GRAHAM MD, KENNETH L, LANSING, KS  
 GRAINGER MD, DAVID A, WICHITA, KS  
 GRANT MD, MICHAEL D, SALINA, KS

GRANT MD, MICHAEL E, WICHITA, KS  
 GRANTHAM MD, HERBERT G, FORT SCOTT, KS  
 GRANTHAM MD, JARED J, KANSAS CITY, KS  
 GRASHOFF MD, JOYCE A, SHAWNEE MISSION, KS  
 GRATNY, LINDA L, LEAVENWORTH, KS  
 GRAUEL MD, CHARLES W, WICHITA, KS  
 GRAVES MD, JACK W, WICHITA, KS  
 GRAVES MD, KATHRYN, HUTCHINSON, KS  
 GRAY MD, C K, SHAWNEE MISSION, KS  
 GRAY MD, APRIL K, KANSAS CITY, KS  
 GRAY MD, C LUCIEN, WICHITA, KS  
 GRAY MD, H TOM, WICHITA, KS  
 GRAYIB MD, ANTOINE S, TOPEKA, KS  
 GREEN MD, ANDREW J, SHAWNEE MISSION, KS  
 GREEN, JUSTIN L, KANSAS CITY, KS  
 GREENBERG MD, GEORGE E, DODGE CITY, KS  
 GREENBERG MD, MARK G, TOPEKA, KS  
 GREENBERGER MD, N J, KANSAS CITY, KS  
 GREENE MD, LAWRENCE S, KANSAS CITY, KS  
 GREENE MD, RUSSELL E, TOPEKA, KS  
 GREENFIELD, MICHAEL A, SHAWNEE MISSION, KS  
 GREENWOOD MD, JAMES F, GARDEN CITY, KS  
 GREENWOOD MD, MELANIE A, WICHITA, KS  
 GREER MD, JAMES A, WICHITA, KS  
 GRELINGER MD, BART A, WICHITA, KS  
 GRENE MD, ROBERT BRUCE, WICHITA, KS  
 GRIEBEL MD, DONNA J, WICHITA, KS  
 GRIFFITH MD, FRANK H, SALINA, KS  
 GRILLOT MD, FLOYD B, PALM HARBOR, FL  
 GRILLOT MD, MICHAEL B, WICHITA, KS  
 GRIMALDI MD, GARY A, PITTSBURG, KS  
 GRIMES MD, I ROSS, LIBERAL, KS  
 GRIMES MD, JAMES T, LYONS, KS  
 GRIN MD, TRUDI R, SHAWNEE MISSION, KS  
 GRINDEL DO, STEPHEN J, WICHITA, KS  
 GRINIS MD, GEDAS M, HUTCHINSON, KS  
 GRISOLIA MD, ANDRES, LEAVENWORTH, KS  
 GRISSOM MD, RHONDA G, SHAWNEE MISSION, KS  
 GRISWOLD MD, DALE G, NEWTON, KS  
 GROS, MARK J, KANSAS CITY, KS  
 GROSS MD, BRIAN M, WICHITA, KS  
 GROSSER MD, DAVID M, SHAWNEE MISSION, KS  
 GROTH MD, STEPHAN J, SHAWNEE MISSION, KS  
 GRUENDEL MD, RICHARD A, KANSAS CITY, KS  
 GRUENDEL MD, VIRGINIA T, KANSAS CITY, KS  
 GRUNDMEIER MD, ANNETTE M, SHAWNEE MISSION, KS  
 GRUSHNYS MD, ARNOLD, WICHITA, KS  
 GSELL MD, GEORGE F, WICHITA, KS  
 GUILLAUME MD, CAROLE A, KANSAS CITY, KS  
 GUNN MD, MARVIN R, SALINA, KS  
 GUPTA MD, GANESH G, WICHITA, KS  
 GURLEY, DANIEL J, SHAWNEE MISSION, KS  
 GUTHRIE MD, RICHARD A, WICHITA, KS  
 GUTOVITZ MD, ALLEN L, TOPEKA, KS  
 GUTTIKONDA MD, PRASAD B, WARREN, OH

## H

HABASHY MD, SHAWKY N F, WICHITA, KS  
 HACKER MD, DAVID C, SHAWNEE MISSION, KS  
 HACKER MD, ELAINE M, TOPEKA, KS  
 HADLEY MD, DELMONT C, OTTAWA, KS  
 HAFFNER MD, WILLIAM N, EL DORADO, KS  
 HAGAN MD, C THOMAS, WICHITA, KS  
 HAGAN MD, FRANCIS J, WICHITA, KS  
 HAGAN MD, ROBERT C, WICHITA, KS  
 HAGAN MD, STEPHEN F, WICHITA, KS  
 HAGGAN MD, MARGARET E, LAWRENCE, KS  
 HAGGERTY III MD PHD, JESSE C, TOPEKA, KS  
 HAGMAN MD, JOSEPH E, WICHITA, KS  
 HAIGLER MD, JAMES P, HAYS, KS  
 HALE MD, RALPH, HUTCHINSON, KS  
 HALE MD, WILLIAM R, NEWTON, KS  
 HALE, ARTHUR E, KANSAS CITY, KS  
 HALL D O, RALPH W, FORT SCOTT, KS  
 HALL MD, J ROGER, WICHITA, KS  
 HALL MD, MARK R, SHAWNEE MISSION, KS  
 HALL MD, ROY P, TOPEKA, KS  
 HALL MD, WESLEY H, GIRARD, KS  
 HALLABA MD, MOHEB A S, GIRARD, KS  
 HALLER MD, CHRIS C, LEAVENWORTH, KS  
 HALLERAN III MD, WILLIAM J, SHAWNEE MISSION, KS  
 HALLEY MD, M MARTIN, TOPEKA, KS  
 HALLING MD, L WILLIAM, HAYS, KS  
 HALLOCK, EDGAR A, KANSAS CITY, KS  
 HALVORSON BEESLEY, KARI J, KANSAS CITY, MO  
 HALVORSON MD, HOWARD C, OLATHE, KS

HAMEL MD, GREGORY L, JUNCTION CITY, KS  
 HAMILL MD, J MARK, SALINA, KS  
 HAMILTON JR MD, JAMES J, TOPEKA, KS  
 HAMILTON MD, DEBORAH K, WICHITA, KS  
 HAMILTON MD, JAMES J, WAKEENEY, KS  
 HAMM MD, ORVAL L, NEWTON, KS  
 HAMMEKE MD, JOHN C, LEAVENWORTH, KS  
 HAMPEL MD, KEVIN G, SALINA, KS  
 HAMTIL MD, LAWRENCE W, SHAWNEE MISSION, KS  
 HAN MD, CHAN S, COFFEYVILLE, KS  
 HAN, JIN C, KANSAS CITY, KS  
 HANCOCK MD, ALAN C, KANSAS CITY, KS  
 HANCOCK MD, DANIEL E, MANHATTAN, KS  
 HANDS MD, SEBEL V, AMARILLO, TX  
 HANDSHY MD, STANLEY E, ERIE, KS  
 HANNA MD, DEBRA S, WARRENSBURG, MO  
 HANNAH MD, ANNE R, LIBERTY, MO  
 HANSEN MD, ERIC E, TOPEKA, KS  
 HANSEN MD, FRANK W, GARDEN CITY, KS  
 HANSON MD, DAVID C, SOUTH HUTCHINSON, KS  
 HARA MD, GLENN S, KANSAS CITY, KS  
 HARBIN MD, GARY L, SALINA, KS  
 HARD MD, BENJAMIN F, KANSAS CITY, MO  
 HARDEN MD, DAVID W, WICHITA, KS  
 HARDIN MD, CREIGHTON A, SHAWNEE MISSION, KS  
 HARDING MD, PHYLLIS M, DODGE CITY, KS  
 HARDTEN MD, DAVID R, BROOKLYN PARK, MN  
 HARMS MD, EDWIN M, NORTH NEWTON, KS  
 HARMS MD, WILMER A, NORTH NEWTON, KS  
 HARRINGTON MD, ELAINE M, WICHITA, KS  
 HARRIS D.O., TIMOTHY P, EMPORIA, KS  
 HARRIS JR MD, CLAIB B, GARNETT, KS  
 HARRIS MD, FRANK H, WICHITA, KS  
 HARRIS MD, HUBERT L, TOPEKA, KS  
 HARRIS MD, LANNY W, SHAWNEE MISSION, KS  
 HARRIS MD, MARGARET H, SHAWNEE MISSION, KS  
 HARRIS MD, NORMAN R, CLEARWATER, FL  
 HARRIS MD, PATRICIA A, TOPEKA, KS  
 HARRIS, BRYAN D, KANSAS CITY, KS  
 HARRISON MD, HALL E, TOPEKA, KS  
 HARRISON MD, PAMELA D, WICHITA, KS  
 HARRISON MD, PAUL B, WICHITA, KS  
 HART MD, DILLIS L, WICHITA, KS  
 HART MD, JOHN J, WICHITA, KS  
 HART MD, KELLY Z, KANSAS CITY, KS  
 HART MD, LAWRENCE E, ATCHISON, KS  
 HARTEL, KELLY LIZABETH, KANSAS CITY, KS  
 HARTER MD, TERRY L, HOLTON, KS  
 HARTIG JR MD, DONALD E, WICHITA, KS  
 HARTLEY MD, FOUNT K, WICHITA, KS  
 HARTLEY MD, JAMES M, WICHITA, KS  
 HARTLEY MD, ROY W, NORTON, KS  
 HARTMAN MD, GERALD V, SHAWNEE MISSION, KS  
 HARTMAN MD, KECK R, WICHITA, KS  
 HARTMAN MD, ROGER L, NORTON, KS  
 HARTONG MD, WILLIAM A, SHAWNEE MISSION, KS  
 HARTWELL MD, KIMBERLY, WICHITA, KS  
 HARTWELL MD, RICK L, WICHITA, KS  
 HARTY MD, JEAN R, SHAWNEE MISSION, KS  
 HARVEY MD, BRUCE E, TOPEKA, KS  
 HARVEY MD, R CLAY, TOPEKA, KS  
 HARVEY MD, ROSEMARY B, WICHITA, KS  
 HARWOOD MD, CLAUDE J, GLASCO, KS  
 HARWOOD MD, MICHAEL R, KANSAS CITY, KS  
 HASKINS MD, ROBERT J, WICHITA, KS  
 HASLETT MD, MARK G, TOPEKA, KS  
 HASSAN MD, RIZWAN U, WICHITA, KS  
 HASSELLE III MD, JAMES E, LAWRENCE, KS  
 HASSLER MD, RANDY D, SALINA, KS  
 HASTINGS MD, GLEN E, WICHITA, KS  
 HASWELL MD, JAMES, WINSTON SALEM, NC  
 HATCHER MD, ELIZABETH R, TOPEKA, KS  
 HATESOHL MD, STANLEY M, CLAY CENTER, KS  
 HATFIELD MD, ALLYSON A, WICHITA, KS  
 HATHAWAY MD, PETER, KANSAS CITY, MO  
 HATTAMER MD, STEVEN J, SOMERSET, MA  
 HATTON MD, DONALD W, LAWRENCE, KS  
 HATTRUP MD, RICHARD J, WICHITA, KS  
 HAUG MD, STEVE, MANHATTAN, KS  
 HAUN MD, RUDY T, MANHATTAN, KS  
 HAUSHEER, MICHELLE R, WICHITA, KS  
 HAVERKAMP MD, KENT D, CARBONDALE, KS  
 HAYEY MD, DAVID, WICHITA, KS  
 HAWLEY MD, RAYMOND G, WICHITA, KS  
 HAY MD, JAMES R, WICHITA, KS  
 HAYES MD, J EDWARD, BOISE, ID  
 HAYES MD, KRIS A, HIAWATHA, KS  
 HAYES MD, WILLIAM L, WICHITA, KS  
 HAYNES MD, DEBORAH G, WICHITA, KS  
 HAYS MD, THOMAS H, WICHITA, KS  
 HEAD MD, DIANE E, WICHITA, KS  
 HEALY MD, PATRICK M, WICHITA, KS



HEASTY MD, ROBERT G, MANHATTAN, KS  
HEBBAR MD, SATYA N, TOPEKA, KS  
HEDDEN MD, RICHARD J, CINCINNATI, OH  
HEDEGAARD MD, CHERYL K, TOPEKA, KS  
HEDRICK MD, KENNETH E, HUTCHINSON, KS  
HEEB MD, CAMILLE S., TOPEKA, KS  
HEEB MD, JON J, SHAWNEE MISSION, KS  
HEIN MD, DANIEL J, SALINA, KS  
HEINRICHS MD, DANIEL J, NEWTON, KS  
HEISLER MD, NORMAN T, SHAWNEE MISSION, KS  
HEIT MD, J ANTHONY, SHAWNEE MISSION, KS  
HELENA MD, WESLEY D, WICHITA, KS  
HELLMAN MD, DAVID W, WICHITA, KS  
HELTON MD, REBECCA A, WICHITA, KS  
HEMAYA MD, AMIR R, SHAWNEE MISSION, KS  
HEMMEN, SHERYL R, ANDALE, KS  
HENDRICK, JAMES D, KANSAS CITY, KS  
HENDRICKS MD, K DWIGHT, KANSAS CITY, KS  
HENNING JR MD, HAROLD J, MANHATTAN, KS  
HENNING MD, CALVIN W, OTTAWA, KS  
HENRY MD, JOSEPH E, SHAWNEE MISSION, KS  
HENSEL JR, JOHN M, KANSAS CITY, MO  
HENWOOD MD, JOHN R, WICHITA, KS  
HERBOLD MD, DAVID R., WICHITA, KS  
HERED MD, JOHN, WICHITA, KS  
HERMRECK MD, ARLO S, KANSAS CITY, KS  
HERNANDEZ-HERMES MD, LISA M, KANSAS CITY,  
MO  
HERRON MD, KRISTINE G, OLATHE, KS  
HERSHORN MD, SIMON E, WICHITA, KS  
HESS MD, STEVEN J, SHAWNEE MISSION, KS  
HESS, KATRINA M, WICHITA, KS  
HESSE MD, JAMES F, WICHITA, KS  
HESSER MD, HERBERT H, SHAWNEE MISSION, KS  
HETT MD, EDWARD J, WICHITA, KS  
HETTINGER MD, MICHAEL E, SHAWNEE MISSION, KS  
HEYER, JENNINE M, KANSAS CITY, KS  
HICKS JR MD, THOMAS E, EMPORIA, KS  
HICKS, KEITH V, KANSAS CITY, KS  
HIEBERT MD, DAVID L, LAWRENCE, KS  
HIEBERT MD, JOHN B, LAWRENCE, KS  
HIEBERT MD, JOHN M, KANSAS CITY, KS  
HIESTERMAN MD, HERMAN W, QUINTER, KS  
HIGGINBOTHAM MD, DENNIS G, OLATHE, KS  
HIGHTOWER MD, CURTIS E, AUBURN, ME  
HIGHLIGHT MD, JAMES E, SHAWNEE MISSION, KS  
HILD MD, PETER G, KANSAS CITY, KS  
HILGER, MARK A, WICHITA, KS  
HILL MD, JAMES E, ARKANSAS CITY, KS  
HILL MD, LARY M, WICHITA, KS  
HILL MD, RICHARD H, MEADE, KS  
HILL MD, ROBERT N, TOPEKA, KS  
HILL MD, RODNEY W, SHAWNEE MISSION, KS  
HINKIN MD, DOUGLAS P, MANHATTAN, KS  
HINSHAW JR MD, CHARLES T, WICHITA, KS  
HINSHAW MD, ALFRED H, WICHITA, KS  
HINSHAW MD, DARLA J, KANSAS CITY, MO  
HINTHORN MD, DANIEL R, KANSAS CITY, KS  
HINTON MD, DONALD W, SHAWNEE MISSION, KS  
HIRSCHBERG MD, J COTTER, TOPEKA, KS  
HISZCZYNSKYJ MD, ROMAN, TOPEKA, KS  
HITCHCOCK MD, C THOMAS, SHAWNEE MISSION, KS  
HIZON MD, RAMON R, WICHITA, KS  
HO MD, TEH I, WICHITA, KS  
HOADLEY MD, WILLIAM D, KANSAS CITY, KS  
HOBBS MD, DONALD D, TOPEKA, KS  
HOBSON MD, MILBURN W, SHAWNEE MISSION, KS  
HOBUS MD, PAUL A, JACKSONVILLE, TX  
HODES MD, HERBERT C, SHAWNEE MISSION, KS  
HODGES MD, MERLE A, SALINA, KS  
HODGES MD, MERLE J, SALINA, KS  
HODGES, JASON L, KANSAS CITY, KS  
HODGSON MD, DAVID K, WASHINGTON, KS  
HODSON MD, DON W, MARION, KS  
HODSON MD, HERVEY R, WICHITA, KS  
HOFFER MD, JOHN G, RAYMORE, MO  
HOFFMAN MD, J PHILIP, LAWRENCE, KS  
HOFFMANN MD, MARY A, LAWRENCE, KS  
HOLCOMB MD, MURRAY A, HUTCHINSON, KS  
HOLDCRAFT MD, JACQUELYNE, KANSAS CITY, KS  
HOLDEN JR MD, RAYMOND F, WICHITA, KS  
HOLDERMAN MD, WALLACE D, HUTCHINSON, KS  
HOLIDAY MD, ALLAN, MANHATTAN, KS  
HOLLADAY MD, FRANK P, KANSAS CITY, KS  
HOLLADAY MD, KENNETH R, EUDORA, KS  
HOLLIS MD, KENNETH W, ALVIN, TX  
HOLLOWAY MD, KELLY D, WICHITA, KS  
HOLLOWAY MD, KEVIN B, WICHITA, KS  
HOLMAN MD, JON B, OLATHE, KS  
HOLMES MD, FREDERICK F, KANSAS CITY, KS  
HOLMES MD, GRACE E, KANSAS CITY, KS  
HOLMES MD, JED, WICHITA, KS

HOLMES MD, ROBERT W, TOPEKA, KS  
HOLSCHER MD, MARK R, PAOLA, KS  
HOLSINGER MD, DONALD M, PITTSBURG, KS  
HOLT MD, JOHN M, WICHITA, KS  
HOLT MD, ROBERT E, BELLEVILLE, KS  
HOLWEGER MD, RONALD, HAYS, KS  
HOOD MD, ROGER W, SHAWNEE MISSION, KS  
HOOVER MD, WILFORD D, HALSTEAD, KS  
HOOPEES MD, PHILLIP C, SHAWNEE MISSION, KS  
HOOVER MD, LARRY A, KANSAS CITY, KS  
HOPKINS JR MD, B MORRISON, SCOTT CITY, KS  
HOPKINS MD, JAMES P, KANSAS CITY, MO  
HOPKINS MD, LENLY, SHAWNEE MISSION, KS  
HOPKINS MD, WILLIAM O, SHAWNEE MISSION, KS  
HOPKINS, KATHY S, OLATHE, KS  
HOPPER MD, CHARLES R, EMPORIA, KS  
HOPPOCK MD, KEVIN C, WICHITA, KS  
HORBELT MD, DOUGLAS V, WICHITA, KS  
HORNBAKER MD, STANLEY D, CARBONDALE, KS  
HORNUNG MD, BRIAN G, SHAWNEE MISSION, KS  
HORNUNG MD, JOEL E, COUNCIL GROVE, KS  
HORTON MD, GREG A, SHAWNEE MISSION, KS  
HOSTETLER MD, ROBERT W, CIMARRON, KS  
HOSTETTER MD, M MORGAN, TOPEKA, KS  
HOSTETTER MD, PHILIP H, MANHATTAN, KS  
HOUGHTON MD, HOWARD L, SHAWNEE MISSION, KS  
HOUN MD, DAVID H, WICHITA, KS  
HOUSE MD, R E, SALINA, KS  
HOUSHOLDER MD, DANIEL F, WICHITA, KS  
HOUSHOLDER MD, MARTHA S, WICHITA, KS  
HOUSTON II MD, LAWRENCE MORLEY, SHAWNEE  
MISSION, KS  
HOVORKA, JOHN, TOPEKA, KS  
HOWARD MD, DONALD O, WICHITA, KS  
HOWELL MD, BARBARA JOYCE, EMPORIA, KS  
HOWELL MD, STEVEN J, WICHITA, KS  
HOWERTER JR MD, BERNARD E, COFFEYVILLE, KS  
HOYT MD, ARTHUR W, TOPEKA, KS  
HSIEH, TSENG T, KANSAS CITY, KS  
HSU MD, CECILIA C, SHAWNEE MISSION, KS  
HSU MD, CHENG H, TOPEKA, KS  
HSU MD, SHIN-FU, TOPEKA, KS  
HUANG MD, JONSON, TOPEKA, KS  
HUDSON MD, ROBERT P, OLATHE, KS  
HUEBERT MD, KORY D, WICHITA, KS  
HUEBNER MD, ROBERT STEPHAN, PITTSBURG, KS  
HUERTER MD, DAVID F, PITTSBURG, KS  
HUERTER MD, QUENTIN C, KANSAS CITY, KS  
HUESTON MD, ALLEN L, KANSAS CITY, KS  
HUFFORD MD, DAVID W, MULVANE, KS  
HUGHES D O, STEVEN R, WICHITA, KS  
HUGHES MD, DOUGLAS W, SHAWNEE MISSION, KS  
HUGHES MD, JOHN D, WICHITA, KS  
HUGHES MD, ROBERT W, LAWRENCE, KS  
HULL MD, LUELLEN, KANSAS CITY, KS  
HULTGREN MD, MYRON K, OLATHE, KS  
HUMMER MD, LLOYD M, WICHITA, KS  
HUMPHREY MD, MARK S, SHAWNEE MISSION, KS  
HUND MD, LARRY R, WICHITA, KS  
HUNKELER MD, JOHN D, KANSAS CITY, MO  
HUNNINGHAKE MD, RONALD, WICHITA, KS  
HUNSBERGER D.O., TERRY R, GARDEN CITY, KS  
HUNTER MD, KARLA J, WICHITA, KS  
HUSEMAN MD, RICHARD ALLAN, SHAWNEE  
MISSION, KS  
HUSER MD, PAUL W, WICHITA, KS  
HUSTEAD MD, ROBERT F, WICHITA, KS  
HUSTON MD, FRANCIS W, WINCHESTER, KS  
HUSTON MD, JOSEPH W, TOPEKA, KS  
HUTCHINS MD, JOEL R, HOLTON, KS  
HUTCHINSON MD, DIRK T, SALINA, KS  
HUTCHINSON MD, STEVEN A, WICHITA, KS  
HUTCHISON MD, GLEN C, HAYS, KS  
HUTCHISON MD, JOE R, LEBOS, KS  
HUTCHISON MD, MICHAEL C, KANSAS CITY, KS  
HUTTON MD, FREDERICK A, TOPEKA, KS  
HUYCKE MD, EDWARD J, WICHITA, KS  
HWANG-HAMILTON, SHAN-SHAN, LAKEWOOD, CA  
HYDER MD, JACE W, WICHITA, KS  
HYMAN MD, ANN B, WICHITA, KS  
HYNES MD, HENRY E, WICHITA, KS

## I

IBARRA MD, J LUIS, WICHITA, KS  
IBARRA MD, RICHARD C, KANSAS CITY, KS  
IDBEIS MD, BADR, WICHITA, KS  
ILIFF MD, R DOUGLAS, TOPEKA, KS  
ILOPOULOS MD, JOHN I, KANSAS CITY, KS

ILORETA MD, ALFREDO T, TOPEKA, KS  
IMSEIS MD, MIKHAIL Y, NESS CITY, KS  
INDECK MD, MARGARET N, WICHITA, KS  
INGHAM JR MD, H LAIRD, LAWRENCE, KS  
INGRAM MD, JOHN E, KANSAS CITY, KS  
INNES MD, ROBERT C, SHAWNEE MISSION, KS  
IRBY MD, PRATT, FORT SCOTT, KS  
ISAAC MD, CHARLES A, NEWTON, KS  
ISAAC MD, STEVEN R, WICHITA, KS  
ISAACSON MD, RICHARD N, TOPEKA, KS  
ISNARD MD, DONNA M, GRANDVIEW, MO  
ISSINGHOFF MD, CHAD J, HUTCHINSON, KS  
IWAY MD, BELINO D, ELKHART, KS  
IWAY MD, OLIVIA N, ELKHART, KS

## J

JABEL MD, JUVENAL T, SATANTA, KS  
JACKSON JR MD, DONALD H, TOPEKA, KS  
JACKSON MD, CHARLES R, WICHITA, KS  
JACKSON MD, MICHAEL D, GARDEN CITY, KS  
JACKSON MD, MICHAEL R, WICHITA, KS  
JACKSON MD, ROBERT S, SHAWNEE MISSION, KS  
JACKSON MD, ROBERT V, SHAWNEE MISSION, KS  
JACKSON MD, THOMAS M, PAOLA, KS  
JACKSON MD, VICTOR L, ALTAMONT, KS  
JACOB MD, KANNAMPALLY L, WICHITA, KS  
JACOB, SERA L, SHAWNEE MISSION, KS  
JACOBS MD, DAVID S, KANSAS CITY, KS  
JACOBS, TOMAYO S, KANSAS CITY, KS  
JACOBY II MD, ROBERT E, TOPEKA, KS  
JADHAV MD, KISHOR B, WICHITA, KS  
JAHANIAN MD, DARYOUSH, KANSAS CITY, KS  
JAMES MD, DONALD L, WICHITA, KS  
JAMES MD, PHILIP C, WICHITA, KS  
JANES MD, DONALD R, GARNETT, KS  
JANSSON MD, KENNETH A, WICHITA, KS  
JANTZ MD, JONATHAN W, NEWTON, KS  
JARROTT MD, JOHN B, HUTCHINSON, KS  
JASTER MD, PAUL J, SALINA, KS  
JATA MD, MARY A, KANSAS CITY, MO  
JAYAKUMAR MD, VIMALA, KANSAS CITY, KS  
JAYARAM MD, MARANDAPALLI R, KANSAS CITY, KS  
JECHA MD, LARRY D, WICHITA, KS  
JEHAN MD, SAYED S, WICHITA, KS  
JENNEY MD, CHARLES B, WICHITA, KS  
JENSEN JR MD, JOHN T, WICHITA, KS  
JENSEN MD, DARAN L, WICHITA, KS  
JENSEN MD, ROBERT D, TOPEKA, KS  
JENSEN MD, THOMAS M, OLATHE, KS  
JERKOVICH MD, GEORGE S, SALINA, KS  
JESTER MD, SHELBY L, WICHITA, KS  
JETER MD, JOHN, KANSAS CITY, KS  
JEWELL MD, WILLIAM R, KANSAS CITY, KS  
JOACHIMS MD, BRIAN V, SHAWNEE MISSION, KS  
JOHANNING, JASON M, KANSAS CITY, KS  
JOHNSON MD, BRIAN A, WICHITA, KS  
JOHNSON MD, CAROL A, WICHITA, KS  
JOHNSON MD, CAROLYN K, WICHITA, KS  
JOHNSON MD, CLIFFORD D, BONNER SPRINGS, KS  
JOHNSON MD, DAVID B, KANSAS CITY, KS  
JOHNSON MD, DAVID B, WICHITA, KS  
JOHNSON MD, GEORGE K, WICHITA, KS  
JOHNSON MD, HOWELL D, DODGE CITY, KS  
JOHNSON MD, J CHRIS, SHAWNEE MISSION, KS  
JOHNSON MD, J RICHARD, MC PHERSON, KS  
JOHNSON MD, JOHN E, KANSAS CITY, KS  
JOHNSON MD, MATTHEW S, WICHITA, KS  
JOHNSON MD, PAMELA M, SHAWNEE MISSION, KS  
JOHNSON MD, PAUL D, LEAVENWORTH, KS  
JOHNSON MD, RANDLE C, HUTCHINSON, KS  
JOHNSON MD, TERESA F, WINFIELD, KS  
JOHNSON MD, TERESA K, WICHITA, KS  
JOHNSON MD, THOMAS E, WICHITA, KS  
JOHNSON-GIANNOPOULOS MD, NADINE, KANSAS  
CITY, KS  
JOHNSON, MILLARD E, WICHITA, KS  
JOHNSTON MD, SARAH C, WICHITA, KS  
JOHNSTON MD, VINCENT B, CHESAPEAKE, VA  
JONES MD, CHARLES E, SHAWNEE MISSION, KS  
JONES MD, CLIFTON C, TOPEKA, KS  
JONES MD, DAVID B, LARNED, KS  
JONES MD, DAVID K, OLATHE, KS  
JONES MD, EDWARD L, GREAT BEND, KS  
JONES MD, H IVOR, SHAWNEE MISSION, KS  
JONES MD, H PENFIELD, LAWRENCE, KS  
JONES MD, JANA D, LANSING, KS  
JONES MD, JAY S, WICHITA, KS  
JONES MD, JON K, WICHITA, KS



JONES MD, MICHAEL P, ATCHISON, KS  
 JONES MD, RODNEY L, WICHITA, KS  
 JONES MD, TERRY G, WINFIELD, KS  
 JONES MD, WILLIAM T, MANHATTAN, KS  
 JONES, KELLY L, KANSAS CITY, KS  
 JONG, CAROL N, KANSAS CITY, KS  
 JOSEPH JR MD, JAMES, WICHITA, KS  
 JOSEPH MD, BRIAN W, TOPEKA, KS  
 JOSEPH MD, HOWARD F, LAWRENCE, KS  
 JOSLIN MD, CHARLIE G, WICHITA, KS  
 JOSLIN MD, PAUL M, WICHITA, KS  
 JOSS MD, CHARLES S, TOPEKA, KS  
 JOST MD, GARY D, WICHITA, KS  
 JOST, CORY J, WICHITA, KS  
 JOYCE MD, G BERNARD, TOPEKA, KS  
 JUBELT MD, HILBERT P, MANHATTAN, KS  
 JUDD MD, KATHLEEN M, FOUNTAIN VALLEY, CA  
 JUDILLA JR MD, FRANCISCO, WICHITA, KS  
 JUSON MD, MANUEL J, LEOTI, KS  
 JUSTUS MD, WILLIAM J, PLEASANTON, KS

## K

KADER MD, GIHAN S, WICHITA, KS  
 KADISON MD, HERBERT I, WICHITA, KS  
 KAHN JR MD, NORMAN B, KANSAS CITY, MO  
 KAHN MD, DAVID M, WICHITA, KS  
 KALDOR MD, RICHARD H, MANHATTAN, KS  
 KALIVAS MD, JAMES, KANSAS CITY, KS  
 KALIVAS MD, LINDA L, SHAWNEE MISSION, KS  
 KANE JR MD, WILLIAM M, HAYS, KS  
 KARDATZKE MD, DAVID S, WICHITA, KS  
 KARDATZKE MD, E STANLEY, MIAMI, FL  
 KARDATZKE MD, JON K, WICHITA, KS  
 KARLIN MD, CHARLES A, SHAWNEE MISSION, KS  
 KASHA MD, ROBERT L, WICHITA, KS  
 KASHYAP MD, BANSHI PRASAD, SHAWNEE MISSION, KS  
 KASPER MD, MICHAEL L, SHAWNEE MISSION, KS  
 KASSEBAUM MD, KENNETH G, WICHITA, KS  
 KASSELMAN, JEFFREY P, WICHITA, KS  
 KATER MD, ERIC D, WICHITA, KS  
 KATZ MD, ARNOLD L, SHAWNEE MISSION, KS  
 KATZ MD, DANIEL A, TOPEKA, KS  
 KATZ MD, FRED S, SHAWNEE MISSION, KS  
 KATZ MD, JEROME B, TOPEKA, KS  
 KAUER MD, CURTIS D, SHAWNEE MISSION, KS  
 KAUFFMAN MD, KURT A, WICHITA, KS  
 KAUFMAN MD, EUGENE E, WICHITA, KS  
 KAUFMAN MD, LELAND R, BURDEN, KS  
 KAUFMAN MD, LEONARD, KANSAS CITY, MO  
 KAUFMAN MD, WILLARD E, MOUNDRIDGE, KS  
 KAUL MD, ANAND N, WINFIELD, KS  
 KAVEL MD, KARL K, TOPEKA, KS  
 KEEVER MD, CRAIG E, TOPEKA, KS  
 KEITGES MD, PIERRE W, SHAWNEE MISSION, KS  
 KEITH MD, REX B, WICHITA, KS  
 KELLER MD, JAMES P, WICHITA, KS  
 KELLER, JOHN W, WAKEENEY, KS  
 KELLERMAN MD, RICK, SALINA, KS  
 KELLEY MD, GORDON R, SHAWNEE MISSION, KS  
 KELLEY, THOMAS D, KANSAS CITY, KS  
 KELLY D O, MARK A, PLAINVILLE, KS  
 KELLY MD, A CHRISTINE, HAYS, KS  
 KELLY MD, DAN A, TOPEKA, KS  
 KELLY MD, MICHELE, SHAWNEE MISSION, KS  
 KENAGY MD, ROBERT S, WICHITA, KS  
 KENDALL MD, TOM E, WICHITA, KS  
 KENDRICK MD, J GILLERAN, WICHITA, KS  
 KENNALLY MD, KEVIN P, SABBETHA, KS  
 KENNEDY MD, FREDERICK R, OLATHE, KS  
 KENNEDY MD, GERALD T, WICHITA, KS  
 KENNEDY MD, JENNIFER E, TOPEKA, KS  
 KENNEDY MD, KENNETH R, SHAWNEE MISSION, KS  
 KENNEDY MD, L ELAINE, LAWRENCE, KS  
 KENNEDY MD, MICHAEL L, BURLINGTON, KS  
 KENNING MD, GERALD F, HUTCHINSON, KS  
 KENNY MD, LAURA M, SHAWNEE MISSION, KS  
 KENOYER MD, M RAY, DODGE CITY, KS  
 KENYON D O, PHIL, MANHATTAN, KS  
 KEPES MD, JOHN J, KANSAS CITY, MO  
 KEPKA MD, DENNIS J, KANOPOLIS, KS  
 KERBY MD, GERALD R, KANSAS CITY, KS  
 KERR MD, GERALD F, FORT SCOTT, KS  
 KERSCHEN MD, VALARIE L, WICHITA, KS  
 KESSLER D O, ALAN, KANSAS CITY, MO  
 KETCHUM MD, LYNN D, SHAWNEE MISSION, KS  
 KETTER MD, IVAN C, HIAWATHA, KS  
 KETTERMAN MD, DIANA K, WICHITA, KS

KETTING MD, RAYMOND B, KANSAS CITY, KS  
 KEYES MD, MICHAEL J, WICHITA, KS  
 KEYS JR MD, ROBERT C, TOPEKA, KS  
 KHARE MD, PRATIBHA, KANSAS CITY, KS  
 KHICHA MD, GYANCHAND J, WICHITA, KS  
 KHOURY MD, DANIEL J, WICHITA, KS  
 KHOURY MD, GEORGE H, WICHITA, KS  
 KIFER MD, C JAMES, HAYS, KS  
 KIHMD MD, ALBERT A, CHANUTE, KS  
 KILGORE III MD, WILLIAM R, WICHITA, KS  
 KIM MD, JONG M, KANSAS CITY, KS  
 KIM MD, PAIK N, WICHITA, KS  
 KIM MD, YONG W, TOPEKA, KS  
 KIM, CLEMENT, WICHITA, KS  
 KIMBALL MD, RICHARD R, MANKATO, KS  
 KIMBLE, BRIAN A, KANSAS CITY, KS  
 KIMMEL MD, KENNETH K, HALSTEAD, KS  
 KIMPLE MD, KRIS G, BELOIT, KS  
 KINDEL MD, VICTORIA W, WICHITA, KS  
 KINDLING MD, PAUL H, TOPEKA, KS  
 KINDRED MD, LYNN H, KANSAS CITY, MO  
 KINDSCHER MD, JAMES D, KANSAS CITY, KS  
 KING MD, WILLIAM T, GREAT BEND, KS  
 KINGREY, DAVID A, WICHITA, KS  
 KINPORTS SR MD, EDWARD B, KANSAS CITY, MO  
 KIPPERMAN MD, ROBERT M, WICHITA, KS  
 KIRBY MD, HOLLY F, SHAWNEE MISSION, KS  
 KIRBY MD, MERLIN G, GREAT BEND, KS  
 KIRCHNER MD, FERNANDO R, TUCSON, AZ  
 KIRK JR MD, E DAVID, WICHITA, KS  
 KIRK MD, THOMAS E, MANHATTAN, KS  
 KIRKEGAARD MD, RODGER S, TOPEKA, KS  
 KIRSCH MD, MARK A, WICHITA, KS  
 KIRVEN MD, SHARON D, KANSAS CITY, KS  
 KISER MD, JOHN L, WICHITA, KS  
 KISER MD, WILLARD J, WICHITA, KS  
 KISHORE MD, SHEELA, PARSONS, KS  
 KIVETT MD, WILLIAM F, SHAWNEE MISSION, KS  
 KLAASSEN MD, KATHERINE L, TOPEKA, KS  
 KLAFTA MD, LEONARD A, WICHITA, KS  
 KLAUMANN MD, MICHELLE, WICHITA, KS  
 KLEIN MD, TERRY D, WICHITA, KS  
 KLEIN MD, THOMAS C, WICHITA, KS  
 KLEINHOLZ JR MD, EMIL JOHN, TOPEKA, KS  
 KLEINSASSER MD, WARREN L, OLATHE, KS  
 KLEMM MD, J MARTIN, KANSAS CITY, MO  
 KLEMMER MD, HERBERT, TOPEKA, KS  
 KLENDA JR MD, MARTIN B, BELOIT, KS  
 KLIWER MD, VERNON L, NEWTON, KS  
 KLINGLER JR MD, EUGENE A, MANHATTAN, KS  
 KLINGMAN MD, DIANE D, WICHITA, KS  
 KLOBASA MD, CHARLES L, MANHATTAN, KS  
 KLONIS D O, DEMOSTHENIS, WICHITA, KS  
 KLOSTER MD, DANIEL R, KANSAS CITY, MO  
 KLOSTERHOFF MD, BRUCE E, HUTCHINSON, KS  
 KLUZAK MD, THOMAS R, WICHITA, KS  
 KNAPP MD, M ROBERT, WICHITA, KS  
 KNAPPENBERGER MD, KURT R, TOPEKA, KS  
 KNAPPENBERGER MD, ROY C, COLORADO SPRINGS, CO  
 KNECHT MD, STEPHEN M, EMPORIA, KS  
 KNEIB MD, TIMOTHY G, MEMPHIS, TN  
 KNEIDEL MD, THOMAS W, WICHITA, KS  
 KNIGHT MD, LAURA C, WICHITA, KS  
 KNIGHT MD, PHILIP J, WICHITA, KS  
 KNOLL MD, BRUCE F, DODGE CITY, KS  
 KNOX MD, JEFFREY B, SALINA, KS  
 KNUDTSON MD, JOHN D, CHESAPEAKE, VA  
 KNUTH MD, KENNETH L, INDEPENDENCE, KS  
 KOCH MD, KEVIN J, SHAWNEE MISSION, KS  
 KODANAZ MD, A AYTEKIN, SHAWNEE MISSION, KS  
 KOEHLER D O, TIMOTHY M, WICHITA, KS  
 KOEHN MD, DANIEL J, PITTSBURG, KS  
 KOEHN MD, NORMAN S, WICHITA, KS  
 KOELLIKER MD, LESLIE M, WICHITA, KS  
 KOHLER MD, LINDA J, SHAWNEE MISSION, KS  
 KOHLER MD, ULRIKE B, SHAWNEE MISSION, KS  
 KOKSAL MD, TOM, GARDEN CITY, KS  
 KOLSTE MD, BART K, OGALLALA, NE  
 KOONS MD, JESS W, LIBERAL, KS  
 KOONTZ MD, JUDITH A, TOPEKA, KS  
 KOOSER MD, JUDITH A, TOPEKA, KS  
 KORBER MD, DAVID E, WICHITA, KS  
 KORTJE MD, DAVID K, ANDOVER, KS  
 KOSSOY D O, ALLEN F, TOPEKA, KS  
 KOSTER MD, KIM R, SAN ANTONIO, TX  
 KOURI MD, SAMMY H, WICHITA, KS  
 KOVAC MD, ANTHONY L, KANSAS CITY, KS  
 KOVARIK MD, ERNEST D, TOPEKA, KS  
 KOWALSKI MD, STEPHEN F, TOPEKA, KS  
 KOZIKOWSKI MD, BEN M, SHAWNEE MISSION, KS  
 KRAMER MD, GARY M, KANSAS CITY, KS

KRANTZ MD, KERMIT E, KANSAS CITY, KS  
 KRAUSE MD, ROLAND L, WICHITA, KS  
 KREADY MD, JOHN L, WICHITA, KS  
 KREHBIEL MD, MARK A, SALINA, KS  
 KRESIE MD, RANDALL J, TOPEKA, KS  
 KRETSINGER DO, W BROCK, EMPORIA, KS  
 KROLL MD, HARRY G, TOPEKA, KS  
 KRUCKEMYER MD, ALAN L, SALINA, KS  
 KUBIN MD, DORIS A, SHAWNEE MISSION, KS  
 KUBINA MD, GLENN RICHARD, WICHITA, KS  
 KUEBLER MD, KEVIN M, SHAWNEE MISSION, KS  
 KUETHER MD, TODD A, KANSAS CITY, KS  
 KUHNIS MD, HENRY R, EL DORADO, KS  
 KUMAR MD, ARUN, WICHITA, KS  
 KUMAR MD, NANDA, MANHATTAN, KS  
 KUMAR MD, SURINDER, NEWTON, KS  
 KUMMER MD, ANTHONY J, KANSAS CTIY, KS  
 KURTH MD, C JOSEPH, WICHITA, KS  
 KURTH MD, ROBERT H, SHAWNEE MISSION, KS  
 KWAPISZESKI MD, BRADLEY R, OAK PARK, IL  
 KWEE MD, SIOE T, KANSAS CITY, KS  
 KYI MD, WIN M, DODGE CITY, KS  
 KYNER MD, JOSEPH L, KANSAS CITY, KS

## L

L'ECUYER MD, JOHN F, SHAWNEE MISSION, KS  
 LABASH MD, STEPHEN S, OBERLIN, KS  
 LACHEO MD, MICHAEL L, TOPEKA, KS  
 LAFEX, SUZANNE R, KANSAS CITY, KS  
 LAHAM MD, ALEXANDER J, DALLAS, TX  
 LAI MD, CHUEN-HUEY, WICHITA, KS  
 LAI MD, JOHN O, SAN FRANCISCO, CA  
 LAI MD, MAX G, TOPEKA, KS  
 LAING MD, ROBERT R, KANSAS CITY, KS  
 LAIRD MD, DALE D, OLATHE, KS  
 LAMBERT MD, KENNETH J, KANSAS CITY KS, KS  
 LAMBERT MD, MICHAEL B, SHAWNEE MISSION, KS  
 LAMBERT, JACQI I, KANSAS CITY, MO  
 LANCE JR MD, JOHN F, WICHITA, KS  
 LANCE MD, RAYMOND W, PITTSBURG, KS  
 LANDAUER MD, KYLE H, KANSAS CITY, MO  
 LANG MD, CLAYTON A, TOPEKA, KS  
 LANGE MD, MARY P, LAWRENCE, KS  
 LANGE MD, MICHAEL, LAWRENCE, KS  
 LAPI MD, ANGELO, SHAWNEE MISSION, KS  
 LAPI MD, RUTH M, SHAWNEE MISSION, KS  
 LAPOINTE MD, LEON R, WICHITA, KS  
 LARREA MD, PABLO J, TAMPA, FL  
 LARSON MD, DANUTA OKTAWIEC, SHAWNEE MISSION, KS  
 LARSON MD, DELBERT L, HIAWATHA, KS  
 LARSON, MELISSA L, SHAWNEE MISSION, KS  
 LASH MD, RAY E, SHAWNEE MISSION, KS  
 LASLEY MD, MICHAEL B, HAYS, KS  
 LATIMER MD, KATHERINE, WICHITA, KS  
 LAUDERT MD, SUSAN E, WICHITA, KS  
 LAUER MD, DAVID K, WICHITA, KS  
 LAUNEY MD, WALTON S, TOPEKA, KS  
 LAURY MD, DAVID G, SAVANNAH, GA  
 LAVA MD, CHIRUND, PARSONS, KS  
 LAW D O, BYRON D, KANSAS CITY, KS  
 LAW MD, FINDLEY, ELLINWOOD, KS  
 LAWHORN MD, CHARLTON D, LITTLE ROCK, AR  
 LAWLESS MD, HAROLD L, BLUE RAPIDS, KS  
 LAWN MD, CLAUDIA A, WICHITA, KS  
 LAWN MD, RAYMOND A, WICHITA, KS  
 LAWRENCE MD, LINDA M, SALINA, KS  
 LAWRENCE MD, MICHAEL K, SALINA, KS  
 LAWS MD, LEWIS R, MARYSVILLE, KS  
 LAWS MD, NANCY J, WICHITA, KS  
 LAWTON MD, STEVEN K, WICHITA, KS  
 LAWILL MD, THEODORE, KANSAS CITY, KS  
 LAYBOURNE JR MD, PAUL C, LAKE PLACID, FL  
 LE MD, CHUONG DUC, GARDEN CITY, KS  
 LEACH, ROBERT J, KANSAS CITY, KS  
 LEAR MD, REX V, WICHITA, KS  
 LEARNED MD, GEORGE R, LAWRENCE, KS  
 LEE JR MD, EDWARD S, WICHITA, KS  
 LEE MD, JAMES G, SHAWNEE MISSION, KS  
 LEE MD, JAE M, KANSAS CITY, KS  
 LEE MD, KYO R, KANSAS CITY, KS  
 LEE MD, MARTIN W, WICHITA, KS  
 LEE MD, MICHAEL T, WICHITA, KS  
 LEE MD, R REX, WICHITA, KS  
 LEE MD, SONG DOW, TOPEKA, KS  
 LEE MD, SONG PING, TOPEKA, KS  
 LEE MD, YONG U, EL DORADO, KS  
 LEESON, MICHAEL C, SHAWNEE MISSION, KS



LEFFLER MD, PAUL B, PITTSBURG, KS  
 LEGASPI JR MD, PEDRO L, SHAWNEE MISSION, KS  
 LEHNERT, DARREN L, WICHITA, KS  
 LEHR MD, CARRIE W, SHAWNEE MISSION, KS  
 LEIFER MD, WILLIAM M, TOPEKA, KS  
 LEIKER MD, JOSEPH, TOPEKA, KS  
 LEIKER, MARK A, KANSAS CITY, KS  
 LEISY MD, JERALD W, WICHITA, KS  
 LEITCH MD, DAVID A, GARNETT, KS  
 LEITNER MD, YORAM B, WICHITA, KS  
 LEMOINE JR MD, ALBERT N, SHAWNEE MISSION, KS  
 LEMONS MD, STEPHEN F, ANDOVER, KS  
 LENEVE MD, ROBERT T, HUGOTON, KS  
 LENTELL MD, MICHELLE M, SHAWNEE MISSION, KS  
 LENTZ MD, WILLIAM R, TOPEKA, KS  
 LEO MD, WILLIAM A, SHAWNEE MISSION, KS  
 LEPSE MD, PETER S, TOPEKA, KS  
 LESKO MD, PAUL D, WICHITA, KS  
 LESSENDEN JR MD, C M, TOPEKA, KS  
 LESSER MD, DANE A, HUTCHINSON, KS  
 LESSIN MD, DIANNA L, HUTCHINSON, KS  
 LESTER MD, JOHN BUCKLES, SHAWNEE MISSION, KS  
 LETOURNEAU MD, EDWARD N, OMAHA, NE  
 LETTNER MD, HANS T, SCOTTSDALE, AZ  
 LEU MD, RICHARD H, WICHITA, KS  
 LEVINE MD, ERROL, KANSAS CITY, KS  
 LEVINE MD, HOWARD T, SHAWNEE MISSION, KS  
 LEVINE MD, JOSEPH M, KANSAS CITY, KS  
 LEVINE MD, WILLIAM R, WICHITA, KS  
 LEVY MD, EDWIN Z, TOPEKA, KS  
 LEWIN MD, WALTER, SHAWNEE MISSION, KS  
 LEWIS MD, TERRY J, GARNETT, KS  
 LEWIS, ANA L, KANSAS CITY, KS  
 LEWIS, E CHRISTOPHER, KANSAS CITY, KS  
 LICHTY MD, DAN M, QUINTER, KS  
 LIEBERMAN MD, BRUCE IRWIN, KANSAS CITY, KS  
 LIES MD, RICHARD B, WICHITA, KS  
 LIESMANN MD, JEAN E, TOPEKA, KS  
 LIN MD, JOE J, WICHITA, KS  
 LIND II MD, EDWARD J, DERBY, KS  
 LINDHOLM MD, DWIGHT L, WICHITA, KS  
 LINDHOLM MD, GERALD R, NEWTON, KS  
 LINDSLEY MD, CAROL B, KANSAS CITY, KS  
 LINDSLEY MD, HERBERT B, KANSAS CITY, KS  
 LINENBERGER, KATHERINE, KANSAS CITY, KS  
 LINHARDT MD, RONALD D, FRANCE, KS  
 LINHARDT, GREGORY S, KANSAS CITY, KS  
 LIPMAN MD, RANDEE E, WICHITA, KS  
 LISTERMAN MD, JOHN C, TOPEKA, KS  
 LITTELL MD, JAMES A, WICHITA, KS  
 LIU MD, ALBERT T, KANSAS CITY, KS  
 LIU MD, CHIEN, KANSAS CITY, KS  
 LIVINGSTON D.O., DOUGLAS R, WICHITA, KS  
 LIVINGSTON MD, CHARLES E, SALINA, KS  
 LLOYD MD, JOHN C, EMPORIA, KS  
 LOCKE MD, MARLIN K, WAKEENEY, KS  
 LOCKWOOD MD, TED E, SHAWNEE MISSION, KS  
 LOEB MD, ELBIE L, HAYS, KS  
 LOEFFLER MD, JAMES A, WICHITA, KS  
 LOEWEN MD, WILLIAM C, WICHITA, KS  
 LOGAN MD, DONNA L, WICHITA, KS  
 LOGAN MD, WILLIAM S, TOPEKA, KS  
 LOGANBILL MD, VARDEN J, MOUNDRIDGE, KS  
 LOHNES JR MD, JOHN H, WICHITA, KS  
 LOKER MD, JAMES L, WICHITA, KS  
 LOMASNEY MD, PATRICK J, HUTCHINSON, KS  
 LONG MD, EDWARD E, HUMBOLDT, KS  
 LONG MD, ROBERT C, SPRINGFIELD, MO  
 LOPEZ MD, MARK D, KANSAS CITY, KS  
 LOPEZ MD, RUBEN J, KANSAS CITY, KS  
 LOPEZ, GRISEL, SHAWNEE MISSION, KS  
 LORENZETTI MD, LISA A, SHAWNEE MISSION, KS  
 LOSEE MD, JOHN M, WICHITA, KS  
 LOTUACO MD, GAMALIEL G, SHAWNEE MISSION, KS  
 LOUIS D O, MICHELLE, WICHITA, KS  
 LOVELAND MD, G CHARLES, LAWRENCE, KS  
 LOVETT MD, PAUL A, WICHITA, KS  
 LOW MD, HAROLD L, WICHITA, KS  
 LOWDEN, DAWNE A, WICHITA, KS  
 LOWE MD, STANLEY W, MANHATTAN, KS  
 LOWER MD, TERI A, WICHITA, KS  
 LOZENSKI MD, JEANETTE M, LEAVENWORTH, KS  
 LUCAS MD, GEORGE L, WICHITA, KS  
 LUDER MD, JACOB K, WICHITA, KS  
 LUDLOW MD, MICHAEL G, WICHITA, KS  
 LUDWIG MD, CAROL S, TOPEKA, KS  
 LUDWIG MD, LEE V, KANSAS CITY, KS  
 LUEGER D O, JAMES J, SENECA, KS  
 LUEKEN MD, LUEKE B, WICHITA, KS  
 LUI MD, NASON, TOPEKA, KS  
 LUJAN, CHARLES R, KANSAS CITY, MO

LUKERT MD, BARBARA P, KANSAS CITY, KS  
 LUNA MD, ANTHONY D, BUCKLIN, KS  
 LUNBERRY MD, JULIA J, COLUMBIA, MO  
 LUND MD, STEPHEN B, SHAWNEE MISSION, KS  
 LUNDAK MD, BRUCE E, SHAWNEE MISSION, KS  
 LUNDQUEST MD, DAVID E, HIAWATHA, KS  
 LUTZ MD, RICHARD E, WICHITA, KS  
 LYGRISSE MD, DANIEL V, WICHITA, KS  
 LYNCH MD, GREGORY P, KANSAS CITY, MO  
 LYNCH MD, JOHN A, TOPEKA, KS  
 LYNCH MD, MARY A, WICHITA, KS  
 LYNCH, MARK A, SHAWNEE MISSION, KS  
 LYONS JR MD, FRANK C, MANHATTAN, KS

## M

MABEN MD, PAMELA S, CHANUTE, KS  
 MACDOUGALL MD, MARGARET L, KANSAS CITY, KS  
 MACE MD, RONALD D, JUNCTION CITY, KS  
 MACE, RHONDA D, KANSAS CITY, KS  
 MACFARLANE MD, DOUGLAS B, OLATHE, KS  
 MACY MD, NORMAN E, SALINA, KS  
 MACY MD, TED L, SALINA, KS  
 MADISON MD, WILLARD A, NORTONVILLE, KS  
 MADSEN MD, GLENN L, LAWRENCE, KS  
 MAGEE D O, RAYMOND D, TOPEKA, KS  
 MAGIDSON MD, ELLIOTT A, WICHITA, KS  
 MAGSALIN MD, ROMULO D, HAYSVILLE, KS  
 MAILMAN MD, GERSHOM, WICHITA, KS  
 MALLONEE MD, WILLIAM M, HUTCHINSON, KS  
 MALLORY MD, JOHN A, SHAWNEE MISSION, KS  
 MANAHAN MD, G EUGENE, LAWRENCE, KS  
 MANASCO MD, RONALD R, WICHITA, KS  
 MANCINA MD, MICHAEL S J, SHAWNEE MISSION, KS  
 MANDELBAUM MD, MARK A, WICHITA, KS  
 MANGUOGLU MD, ALI B, SALINA, KS  
 MANI MD, MANI M, KANSAS CITY, KS  
 MANN MD, JOHN B, HAYS, KS  
 MANNING MD, ROBERT T, WICHITA, KS  
 MANSUR MD, LISA I, TAYLORSVILLE, UT  
 MANTZ MD, FRANK A, SHAWNEE MISSION, KS  
 MARBACH MD, JAMES C, WICHITA, KS  
 MARCELL MD, GERALD W, LYNDON, KS  
 MARCHBANKS MD, DONALD L, SALINA, KS  
 MARINE MD, CLIFFORD S, OLATHE, KS  
 MARKESE, SABRINA, KANSAS CITY, KS  
 MARPLES MD, BRADLEY W, TOPEKA, KS  
 MARPLES MD, DOUGLAS, DODGE CITY, KS  
 MARQUETTE MD, RAY J, MIAMI, FL  
 MARSH MD, CONNIE M, WICHITA, KS  
 MARSH MD, HENRY O, WICHITA, KS  
 MARSHALL MD, GEORGE W, SALINA, KS  
 MARSHALL MD, ROBERT J, GARDEN CITY, KS  
 MARSHALL MD, ROGER W, GREAT BEND, KS  
 MARSHALL MD, RONALD L, MANHATTAN, KS  
 MARSO MD, STEVE P, SHAWNEE MISSION, KS  
 MARTIN JR MD, GLEN E, WICHITA, KS  
 MARTIN MD, JEFFERY L, TOPEKA, KS  
 MARTIN MD, JOSEPH P, KANSAS CITY, KS  
 MARTIN MD, MELANIE A, SHAWNEE MISSION, KS  
 MARTIN MD, NORMAN L, KANSAS CITY, KS  
 MARTIN MD, OLIVER L, SALINA, KS  
 MARTIN MD, RONALD L, WICHITA, KS  
 MARTIN MD, WILLIAM O, TOPEKA, KS  
 MARTIN, COLEMAN O, KANSAS CITY, KS  
 MARVEL MD, JAMES E, ARKANSAS CITY, KS  
 MARYMONT JR MD, JESSE H, WICHITA, KS  
 MASON MD, WAYNE E, INDEPENDENCE, KS  
 MASSIER, KIM M, SHAWNEE MISSION, KS  
 MASTERS MD, FRANCIS W, SHAWNEE MISSION, KS  
 MASTIO JR MD, GEORGE J, WICHITA, KS  
 MATASSARIN MD, BENJAMIN M, WICHITA, KS  
 MATASSARIN MD, FREDERICK W, WICHITA, KS  
 MATTHEWS D O, THOMAS G, GARDEN CITY, KS  
 MATHEWS MD, DAVID R, KANSAS CITY, MO  
 MATHEWS MD, ROBERT M, SHAWNEE MISSION, KS  
 MATHEWSON MD, HUGH S, KANSAS CITY, KS  
 MATLOCK MD, MARK S, HUTCHINSON, KS  
 MATTHEW MD, BRIAN T, IOWA CITY, IA  
 MATTHEW MD, WILLIAM L, OLATHE, KS  
 MATTHEWS D O, GEORGE E, GARDEN CITY, KS  
 MATTHEWS MD, EARL H, SALINA, KS  
 MATTICK MD, IRVIN H, HAYS, KS  
 MATTIOLI MD, LEONE, KANSAS CITY, KS  
 MAUCK MD, HAROLD C, STOCKTON, KS  
 MAURICIO MD, DENNY G, WICHITA, KS  
 MAVEC MD, JAMES A, SHAWNEE MISSION, KS  
 MAWDSLEY MD, MICHAEL W, WICHITA, KS  
 MAXFIELD MD, RUSSELL J, COLORADO SPRINGS, CO  
 MAXWELL MD, GORDON E, SALINA, KS

MAXWELL MD, ROBERT A, SHAWNEE MISSION, KS  
 MAY MD, KENNETH L, BONNER SPRINGS, KS  
 MAY MD, LANCE A, TACOMA, WA  
 MAYS MD, KEVIN P, LITTLE ROCK, AR  
 MAYUR MD, NITIN N, WICHITA, KS  
 MC FARLAND MD, GRETA S, CHANUTE, KS  
 MCALLASTER MD, CLAUDIA, LEAVENWORTH, KS  
 MCALLASTER MD, WENDALE E, GREAT BEND, KS  
 MCANELLY MD, ROBERT D, SAN ANTONIO, TX  
 MCATEE MD, JAMES R, KANSAS CITY, KS  
 MCBOYLE MD, MARILEE, WICHITA, KS  
 MCBRATNEY MD, KATHLEEN R, LEAVENWORTH, KS  
 MCCABE MD, MAUREEN E, TOPEKA, KS  
 MCCANN MD, PATRICK E, FORT SCOTT, KS  
 MCCANN MD, WILLIAM E, OLATHE, KS  
 MCCARTER MD, DUANE K, TOPEKA, KS  
 MCCARTHY MD, AILEEN C, TOPEKA, KS  
 MCCARTHY MD, ROBERT P, KANSAS CITY, KS  
 MCCAULEY MD, ROBERT L, SALT LAKE CITY, UT  
 MCCLANAHAN MD, WARD A, WICHITA, KS  
 MCCELLEAN MD, ERNEST L, WICHITA, KS  
 MCCLINTICK D O, MICHAEL D, EUREKA, KS  
 MCCOLLUM MD, WILLIAM B, LEAVENWORTH, KS  
 MCCORMICK MD, EUGENE CARL, WELLINGTON, KS  
 MCCOWEN MD, HERBERT M, SHAWNEE MISSION, KS  
 MCCOWN MD, ROBERT B, WICHITA, KS  
 MCCOY MD, C PATRICK, WICHITA, KS  
 MCCOY MD, CHARLES P, WICHITA, KS  
 MCCOY MD, CHARLES T, HUTCHINSON, KS  
 MCCOY MD, MICHAEL T, TOPEKA, KS  
 MCCOY, MIKKI L, KANSAS CITY, KS  
 MCCRAE MD, SPENCER C, SALINA, KS  
 MCCULLOCH MD, DAWNA L, KANSAS CITY, KS  
 MCCUNE MD, MARK A, SHAWNEE MISSION, KS  
 MCDANIEL MD, R JAMES, PITTSBURG, KS  
 MCDONALD MD, KEVIN R, HAYS, KS  
 MCDONALD MD, TERENCE, WICHITA, KS  
 MCDONALD MD, THOMAS L, HAYS, KS  
 MCDONOUGH MD, W DAVID, WICHITA, KS  
 MCDOWELL, CHARLES S, SHAWNEE MISSION, KS  
 MCDOWELL, KATHLEEN L, WICHITA, KS  
 MCEACHEN MD, WILLIAM H, SHAWNEE MISSION, KS  
 MCELHINNEY MD, CHARLES F, DODGE CITY, KS  
 MCELROY MD, ROBERT T, TOPEKA, KS  
 MCGINNESS MD, MARILEE K, LAWRENCE, KS  
 MCGOVERN JR MD, JAMES L, TOPEKA, KS  
 MCGRATH MD, BARBARA A, SHAWNEE MISSION, KS  
 MCGUIRE MD, CHARLES W, WICHITA, KS  
 MCGUIRE MD, THOMAS H, SHAWNEE MISSION, KS  
 MCGUIRE MD, WILLIAM F, WICHITA, KS  
 MCINNIS MD, DALTON B, WICHITA, KS  
 MCINTEE MD, RAE A, SHAWNEE MISSION, KS  
 MCKAY MD, ROBERT S, WICHITA, KS  
 MCKEE MD, GARY S, HUTCHINSON, KS  
 MCKENNA MD, MICHAEL J, FORT SCOTT, KS  
 MCKERRACHER MD, ROBERT D, MULVANE, KS  
 MCKINNEY D O, SHARON L, TOPEKA, KS  
 MCCLAIN MD, KENNETH, RANSOM, KS  
 MCLEAN MD, THOMAS R, KANSAS CITY, KS  
 MCMASTER MD, JOHN F, WICHITA, KS  
 MCMULLEN MD, BRUCE R, WICHITA, KS  
 MCMULLEN MD, JOSEPH E, HUTCHINSON, KS  
 MCMURRAY MD, LAURA J, SHAWNEE MISSION, KS  
 MCNAMARA MD, PATRICIA, WICHITA, KS  
 MCNEIL MD, ELBERT D, MANHATTAN, KS  
 MCNICKLE MD, GEORGE A, WICHITA, KS  
 MCQUEEN MD, DAVID A, WICHITA, KS  
 MEADOR D O, RICHARD W, MEDICINE LODGE, KS  
 MEANS MD, MILA L, WICHITA, KS  
 MEARS D O, GREGORY H, INDEPENDENCE, KS  
 MEBUST MD, WINSTON K, KANSAS CITY, KS  
 MEEK JR MD, JOSEPH C, WICHITA, KS  
 MEEK MD, PALMER F, MANHATTAN, KS  
 MEEKER II MD, BRUCE P, BELLE PLAINE, KS  
 MEEKS MD, CAPT MARK, KILLEEN, TX  
 MEGAFFIN MD, BERNARD B, KANSAS CITY, KS  
 MEHTA MD, PRAFUL, WICHITA, KS  
 MEIDINGER MD, RAY, HIAWATHA, KS  
 MEIDINGER MD, RICHARD, TOPEKA, KS  
 MEIER MD, MICHAEL M, KANSAS CITY, KS  
 MEIER MD, MITCHELL S, WICHITA, KS  
 MEIER MD, PATRICIA A, SAN ANTONIO, TX  
 MEISEL JR MD, RICHARD L, WICHITA, KS  
 MEISTER MD, GREGORY C, WICHITA, KS  
 MELEAN MD, JAIME, WICHITA, KS  
 MELHAM MD, THOMAS J, MUNCIE, IN  
 MELHORN MD, J MARK, WICHITA, KS  
 MELHORN MD, KATHERINE J, WICHITA, KS  
 MELIN MD, BRUCE D, GARDEN CITY, KS  
 MENAKER MD, JEROME S, WICHITA, KS  
 MENDIOLA MD, AMBROSIO P, LEAVENWORTH, KS  
 MENDIONES MD, L MARLENE, WICHITA, KS



MENDLICK MD, R MICHAEL, OLATHE, KS  
 MENEHAN MD, H JAMES, WICHITA, KS  
 MENGEL MD, CHARLES E, LEAVENWORTH, KS  
 MENKING MD, F W MANFRED, WICHITA, KS  
 MENKING MD, SUSAN M, WICHITA, KS  
 MENNINGER MD, BRENT O, TOPEKA, KS  
 MENNINGER MD, ROBERT G, TOPEKA, KS  
 MENNINGER MD, ROY W, TOPEKA, KS  
 MENNINGER MD, W WALTER, TOPEKA, KS  
 MENON MD, REMA, PARSONS, KS  
 MENZEL MD, THOMAS E, SENECA, KS  
 MERCADER MD, MARIO S, WICHITA, KS  
 MEREDITH MD, W TOM, WICHITA, KS  
 MERKEL MD, EARL D, RUSSELL, KS  
 MERRIFIELD MD, TERRY S, WICHITA, KS  
 MERRITT MD, W HENRY, LEAVENWORTH, KS  
 MERSHON MD, JAMES C, WICHITA, KS  
 MESSAMORE MD, DEBRA L, WICHITA, KS  
 MESSNER MD, STAN A, WICHITA, KS  
 MEYER MD, ANGELA M, WICHITA, KS  
 MEYER MD, MARK C, KANSAS CITY, KS  
 MEYER MD, O WARREN, TOPEKA, KS  
 MEYER MD, WARREN E, WICHITA, KS  
 MEYERS MD, STEPHEN, GARDEN CITY, KS  
 MHATRE MD, VIJAY R, TOPEKA, KS  
 MICHELBAACH MD, ALBERT P, WICHITA, KS  
 MIGLIAZZO MD, CARL V, SHAWNEE MISSION, KS  
 MIGUELINO MD, OLIVER M, EMPORIA, KS  
 MILES MD, WILLIAM S, SHAWNEE MISSION, KS  
 MILFELD MD, DOUGLAS J, WICHITA, KS  
 MILLER D O, STEPHEN A, COFFEYVILLE, KS  
 MILLER MD, DAVID P, WICHITA, KS  
 MILLER MD, DEAN M, PARSONS, KS  
 MILLER MD, DENNIS W, KANSAS CITY, KS  
 MILLER MD, DON E, TAMPA, FL  
 MILLER MD, EARL E, PITTSBURG, KS  
 MILLER MD, ELDEN V, SALINA, KS  
 MILLER MD, F LANCE, SHAWNEE MISSION, KS  
 MILLER MD, FRANKLIN R, WINFIELD, KS  
 MILLER MD, HERBERT C, NORTHFORD, CT  
 MILLER MD, ROBERT E, GARDEN CITY, KS  
 MILLER MD, ROGER M, WICHITA, KS  
 MILLER MD, STEPHEN F, PARSONS, KS  
 MILLER MD, TODD A, WICHITA, KS  
 MILLER, CHRISTOPHER D, SHAWNEE MISSION, KS  
 MILLIGAN MD, DONALD B, KANSAS CITY, KS  
 MILLS JR MD, PHILIP E, TOPEKA, KS  
 MILLS MD, BRIAN G, SHAWNEE MISSION, KS  
 MILLS MD, CRAIG G, KANSAS CITY, KS  
 MILLS MD, PHILIP R, WICHITA, KS  
 MILLS MD, STEPHEN C, HUTCHINSON, KS  
 MILLS MD, VERNON A, LEAVENWORTH, KS  
 MIMIAGA MD, ANNE T, WICHITA, KS  
 MINGLE MD, RALPH R, SHAWNEE MISSION, KS  
 MINNS MD, GAROLD O, WICHITA, KS  
 MIRANDA MD, JOSEPH R, WICHITA, KS  
 MISKEW MD, DON B W, SHAWNEE MISSION, KS  
 MITCHELL, DANIEL S, WICHITA, KS  
 MODDRELL MD, CAROL A, LAWRENCE, KS  
 MODELL MD, ELLEN M, SHAWNEE MISSION, KS  
 MODLIN MD, HERBERT C, TOPEKA, KS  
 MOELLER MD, CHRISTOPHER A, WICHITA, KS  
 MOELLER MD, DONALD D, KANSAS CITY, KS  
 MOFFAT MD, ROBERT E, SHAWNEE MISSION, KS  
 MOGHE MD, CHANDRAKANT B, COLUMBUS, KS  
 MOHLER MD, JACK M, ABILENE, KS  
 MOLOS MD, MARK A, KANSAS CITY, KS  
 MONTERO JR MD, CARLOS, MIAMI, FL  
 MONTGOMERY MD, MICHAEL L, EMPORIA, KS  
 MONTGOMERYSHORT MD, RUTH G, WICHITA, KS  
 MOORE MD, DENNIS F, WICHITA, KS  
 MOORE MD, JAMES E, NEWTON, KS  
 MOORE MD, JULIE A, SALINA, KS  
 MOORE MD, ROBERT, HOISINGTON, KS  
 MOORE MD, ROBERT F, CANEY, KS  
 MOORE MD, WAYNE V, KANSAS CITY, KS  
 MOORE, CHARLES F, KANSAS CITY, KS  
 MOORHEAD JR MD, F ALLEN, NEODESHA, KS  
 MORALES JR MD, OSCAR, BOX 479 LOS ANGELES, CA  
 MOREANO MD, PHILLIP A, WICHITA, KS  
 MORFFI MD, RAUL R, KANSAS CITY, KS  
 MORFORD MD, RONALD G, WICHITA, KS  
 MORGAN II MD, DAVID L, OLATHE, KS  
 MORGAN III MD, LOUIS S, WICHITA, KS  
 MORGAN MD, DICK A, WICHITA, KS  
 MORGAN MD, JAMES I, WICHITA, KS  
 MORGAN MD, MITCH A, WICHITA, KS  
 MORGAN MD, RANDALL J, WICHITA, KS  
 MORITZ MD, RICK S, SHAWNEE MISSION, KS  
 MORRELL MD, DAVID G, WICHITA, KS  
 MORRIS MD, HARRY A, WICHITA, KS

MORRIS MD, MERLE D, TOPEKA, KS  
 MORRISON MD, GRACE A, TOPEKA, KS  
 MORRISON MD, MICHAEL R, TOPEKA, KS  
 MORRISON MD, RICHARD L, WICHITA, KS  
 MORROW MD, THOMAS F, WICHITA, KS  
 MORTENSEN MD, STEEN E, WICHITA, KS  
 MOSELEY, A CANDACE, KANSAS CITY, MO  
 MOSER JR MD, ROBERT P, TRIBUNE, KS  
 MOSER MD, SCOTT E, WICHITA, KS  
 MOSIER MD, KEVIN M, PARSONS, KS  
 MOSIER MD, MIKE, MANHATTAN, KS  
 MOSIER MD, STANLEY J, WICHITA, KS  
 MOSIER MD, STEVEN J, MANHATTAN, KS  
 MOSIER, SUSAN K, KANSAS CITY, KS  
 MOSSINGHOFF MD, DEBORAH A, SHAWNEE MISSION, KS  
 MOWERY MD, WILLIAM E, SALINA, KS  
 MOWRY MD, GERALD L, MANHATTAN, KS  
 MROZ MD, MARY K, WICHITA, KS  
 MUDALIAR MD, JUNAID H, WICHITA, KS  
 MUEHLBERGER MD, JAMES J, SHAWNEE MISSION, KS  
 MUELLER MD, ARNOLD V, TOPEKA, KS  
 MUELLER MD, MICHAEL A, WICHITA, KS  
 MUILENBURG MD, JEFFREY J, WICHITA, KS  
 MULL MD, JOHN C, HUTCHINSON, KS  
 MULLIGAN MD, LINDA L, WAUWATOSA, WI  
 MULLINIX MD, JANICE M, WICHITA, KS  
 MULLINS MD, JOHN R, WICHITA, KS  
 MUNNS MD, STEPHEN W, KANSAS CITY, KS  
 MURFITT MD, MALCOLM C, LINDSBORG, KS  
 MURPHY MD, BARRY L, WICHITA, KS  
 MURPHY MD, DUANE A, WICHITA, KS  
 MURPHY MD, JAY W, SHAWNEE MISSION, KS  
 MURPHY MD, MICHAEL J, TOPEKA, KS  
 MURPHY MD, PATRICK L, WICHITA, KS  
 MURPHY MD, PAUL M, WICHITA, KS  
 MURPHY MD, PAUL W, WICHITA, KS  
 MURPHY MD, TRACY D, KANSAS CITY, KS  
 MURPHY MD, WILLIAM R, NEWTON, KS  
 MURPHY MD, WILLIAM R C, WICHITA, KS  
 MURPHY, DANIEL J, KANSAS CITY, KS  
 MURRAY MD, JANE L, KANSAS CITY, KS  
 MURRAY MD, KENT B, WICHITA, KS  
 MURRAY MD, W LEE, KANSAS CITY, MO  
 MURROW MD, RICHARD W, WICHITA, KS  
 MYERS IV MD, PERCY C, TOPEKA, KS  
 MYERS MD, DANIEL L, CONCORDIA, KS  
 MYERS MD, JO ANNE, TOPEKA, KS  
 MYRICK MD, MICKEY C, WICHITA, KS  
 MYRICK MD, STEPHEN W, LAWRENCE, KS

## N

NABOURS MD, RICHARD D, TOPEKA, KS  
 NACHTIGALL MD, ANDREW, WICHITA, KS  
 NAGARAJU MD, ARRAMRAJU, EMPORIA, KS  
 NALDOZA JR MD, FAUSTINO M, WELLINGTON, KS  
 NANCE MD, JOEL H, TOPEKA, KS  
 NANNNEY MD, GREGORY D, HUTCHINSON, KS  
 NARCISO MD, VICENTE D, ABILENE, KS  
 NASH MD, CYNTHIA I, WICHITA, KS  
 NASRALLA MD, CRAIG A, WICHITA, KS  
 NASSERI MD, KEVIN K, KANSAS CITY, KS  
 NASSIF MD, IMAD I, WICHITA, KS  
 NATHAN MD, WILLIAM A, TOPEKA, KS  
 NAUER MD, PAULA LOU, SHAWNEE MISSION, KS  
 NAVICKAS MD, LEONARD A, SHAWNEE MISSION, KS  
 NAZARIO MD, LILIANA E, SHAWNEE MISSION, KS  
 NEEF MD, DOUG STEVENS, HUMBOLDT, KS  
 NEEL MD, JAMES W, WICHITA, KS  
 NEFF MD, JAMES R, OMAHA, NE  
 NEHORAYAN, MARC L, ENCINO, CA  
 NEIBURGER MD, JAMES B, SHAWNEE MISSION, KS  
 NEIGHBOR MD, ERNEST H, SHAWNEE MISSION, KS  
 NEIL MD, ROY N, HAYS, KS  
 NELSON JR MD, GUST H, WICHITA, KS  
 NELSON MD, BRYAN C, SHAWNEE MISSION, KS  
 NELSON MD, CHARLES G, DODGE CITY, KS  
 NELSON MD, GERALD D, WICHITA, KS  
 NELSON MD, JOHN B, KANSAS CITY, KS  
 NELSON MD, MARIAN K, CLAY CENTER, KS  
 NELSON MD, RUSSELL A, WICHITA, KS  
 NELSON, JANET M, SHAWNEE MISSION, KS  
 NELSON, TAMMIE L, SHAWNEE MISSION, KS  
 NESMITH MD, LESLIE W, WICHITA, KS  
 NETHERTON MD, DAVID M, WICHITA, KS  
 NEUENSCHWANDER MD, JOHN, HOXIE, KS  
 NEUENSCHWANDER MD, JOHN RAND, HOXIE, KS

NEUER MD, FREDERICK S, EMPORIA, KS  
 NEUHAUS, JOHN P, KANEONE, HI  
 NEUMAN MD, MICHAEL J, WICHITA, KS  
 NEUMANN MD, JAMES W, SALINA, KS  
 NEUSCHAFER MD, DARREL R, HUTCHINSON, KS  
 NEVINS MD, RICHARD L, LIBERAL, KS  
 NEWBY MD, JAMES P, WICHITA, KS  
 NEWBY, CORY, WICHITA, KS  
 NEWCOMB MD, WARD M, HAYS, KS  
 NEWELL, LINDA C, SHAWNEE MISSION, KS  
 NEWLIN MD, PHILIP L, WICHITA, KS  
 NEWSOM MD, F CARTER, WICHITA, KS  
 NEWTH D O, MARK S, TOPEKA, KS  
 NGUYEN MD, Z CHAT, WICHITA, KS  
 NIBBELINK MD, LARRY W, KANSAS CITY, KS  
 NICE MD, G WILLIAM, TOPEKA, KS  
 NICHOLAS MD, W JOHN, WICHITA, KS  
 NICHOLS D O, DAVID J, TOPEKA, KS  
 NICHOLS MD, JON C, ROCHESTER, MN  
 NICHOLS MD, ROBERT R, FORT SCOTT, KS  
 NICKELL MD, WENDELL K, SALINA, KS  
 NIEDEREE MD, DAVID W, DERBY, KS  
 NIELSEN MD, MARY L, WICHITA, KS  
 NIENSTEDT MD, JOHN F, SUN CITY, AZ  
 NIERNBERGER D O, JERRY E, WICHITA, KS  
 NIGH MD, STEPHEN S, CHESAPEAKE, VA  
 NIGHTENGAL MD, DIANE D, EL DORADO, KS  
 NIHIRA, MIKIO A, KANSAS CITY, KS  
 NIKNIA MD, MORTEZA, GARDNER, KS  
 NIXON JR, NED R, SHAWNEE MISSION, KS  
 NIXON MD, JAMES E, DODGE CITY, KS  
 NIXON MD, WILLIAM A, WICHITA, KS  
 NOBLE MD, MARK J, KANSAS CITY, KS  
 NOLA MD, BOUNSAVATH, WICHITA, KS  
 NOLAN D O, PHYLLIS C, WICHITA, KS  
 NOLKER, STEPHEN G, LAWSON, MO  
 NOLLA MD, LORANE B, WICHITA, KS  
 NOORDHOEK MD, LYLE J, HAYS, KS  
 NORA, JOSEPH T, TOPEKA, KS  
 NORMAN MD, BENJAMIN R, WICHITA, KS  
 NORRIS MD, CHARLEY W, KANSAS CITY, KS  
 NORRIS MD, ROBERT P, WICHITA, KS  
 NORTH MD, DORIS G, WICHITA, KS  
 NORTON MD, KENNETH A, SHAWNEE MISSION, KS  
 NORTON MD, ROBERT K, WICHITA, KS  
 NOSTI MD, JUAN C, SHAWNEE MISSION, KS  
 NOTHNAGEL MD, ARNOLD F, SHAWNEE MISSION, KS  
 NOTTINGHAM MD, ROBERT M, OLATHE, KS  
 NOVOTNY MD, PETER C, TOPEKA, KS  
 NULL MD, WILLIAM G, SALINA, KS  
 NUNEMAKER MD, MARION E, HUTCHINSON, KS  
 NUNLEY MD, PIERCE D, SHREVEPORT, LA  
 NYBERG MD, FREDRIK F, TOWANDA, KS  
 NYE MD, C ERIK, SHAWNEE MISSION, KS

## O

O'BOYNICK II MD, PAUL LEONARD, KANSAS CITY, KS  
 O'CALLAGHAN MD, WILLIAM K, TOPEKA, KS  
 O'CONNELL MD, SARA S, SHAWNEE MISSION, KS  
 O'DONNELL JR MD, LEONARD A, WICHITA, KS  
 O'DONNELL MD, HARRY E, MANHATTAN, KS  
 O'DONNELL MD, JANAT E, PHOENIX, AZ  
 O'KEEFE D O, CATHERINE M, TOPEKA, KS  
 O'NEAL MD, LYNN W, LAWRENCE, KS  
 O'NEIL MD, ROBERT H, TOPEKA, KS  
 OCHSNER MD, BRUCE B, WICHITA, KS  
 ODENHEIMER MD, BURTRAM J, WICHITA, KS  
 ODGERS MD, RODNEY K, PITTSBURG, KS  
 OEHME MD, STEPHEN F, APO, AE  
 OHMAN MD, RICHARD J, DODGE CITY, KS  
 OHMART MD, RICHARD V, OAKLEY, KS  
 OLD MD, JERRY L, ARKANSAS CITY, KS  
 OLMSTEAD MD, CALVIN G, WICHITA, KS  
 OLNEY MD, BRAD W, KANSAS CITY, KS  
 OLNEY MD, ROBERT D, MANHATTAN, KS  
 OLSEN MD, PHILLIP S, EL DORADO, KS  
 OLSON MD, NANCY Y, KANSAS CITY, KS  
 OLSON MD, DAN E, WICHITA, KS  
 OLSON MD, ERWIN T, NEWTON, KS  
 OLSON MD, INGER L, INDIANAPOLIS, IN  
 OLSON MD, THOMAS H, SHAWNEE MISSION, KS  
 OMMEN MD, SHARI L, PAOLA, KS  
 OPLIGER DO, ERIC R, GARDEN CITY, KS  
 ORCHARD MD, RICHARD A, LAWRENCE, KS  
 ORTH MD, GREGORY, WICHITA, KS  
 ORTH-BAALMAN MD, DIANE M, WICHITA, KS  
 OSBERN MD, LIDA, LAWRENCE, KS  
 OSBORNE MD, CONRAD C, WICHITA, KS



OSIO MD, ANTONIO L, WICHITA, KS  
 OSOBA MD, WILLIAM G, WICHITA, KS  
 OSTER MD, JOYCE A, WICHITA, KS  
 OTTINGER MD, CHRISTOPHER M, SHAWNEE MISSION, KS  
 OUANO JR MD, BIBIANO B, WICHITA, KS  
 OWEN III MD, JAMES W, TOPEKA, KS  
 OWEN MD, LARUE W, WICHITA, KS  
 OWEN MD, PERE A, WICHITA, KS  
 OWENS JR MD, WILLIAM S, COLUMBIA, SC  
 OWENS MD, DAVID B, SHAWNEE MISSION, KS  
 OXLER JR MD, JOHN EDWARD, SHAWNEE MISSION, KS  
 OXLEY MD, DWIGHT K, WICHITA, KS  
 OZANNE MD, STEPHEN, WICHITA, KS

## P

PAGE D O, LESLIE F, FORT SCOTT, KS  
 PAGE MD, RUTH, WICHITA, KS  
 PAI MD, RADHA V, PARSONS, KS  
 PAI MD, VARADARAJ S, PARSONS, KS  
 PALAGANAS-TOSCO MD, AMANDA C, MCLOUTH, KS  
 PALAZZOLO MD, MICHAEL J, KANSAS CITY, KS  
 PALKO MD, WILLIAM M, WICHITA, KS  
 PALMBERG MD, KENT E, TOPEKA, KS  
 PALMER MD, DAVID L, WICHITA, KS  
 PALMER MD, GERALD K, SALINA, KS  
 PALMER MD, MARVIN M, LEAVENWORTH, KS  
 PALTOO MD, RAYMOND M, LIBERAL, KS  
 PANKOW MD, KIMBERLY J, WICHITA, KS  
 PANKOW MD, LARRY M, WICHITA, KS  
 PAPP JR MD, S DEAN, PITTSBURG, KS  
 PARANJOTHI MD, SUBRAMANIAM P, PARSONS, KS  
 PARDO MD, LILLIAN G, KANSAS CITY, KS  
 PARDO MD, MANUEL F, KANSAS CITY, KS  
 PAREKH MD, AJITKUMAR M, KANSAS CITY, KS  
 PAREKH MD, MADHAVI A, SHAWNEE MISSION, KS  
 PARHAM MD, VERDON W, CHANUTE, KS  
 PARHAM, PAMELA C, KANSAS CITY, KS  
 PARK, RACHAEL E, WICHITA, KS  
 PARKER MD, HAROLD L, WICHITA, KS  
 PARKS MD, DOUGLAS S, CHEYENNE, WY  
 PARKS MD, JON C, WICHITA, KS  
 PARMAN MD, CRAIG R, WICHITA, KS  
 PARMAN MD, LINDA M, LAWRENCE, KS  
 PARMAN MD, ROBERT D, TOPEKA, KS  
 PARR JR MD, HAROLD E, TOPEKA, KS  
 PARR MD, CATHERINE, SHAWNEE MISSION, KS  
 PARRA MD, DANIEL C, KANSAS CITY, KS  
 PARRA MD, MIGUEL D, KANSAS CITY, KS  
 PARRIS MD, ROGER D, FORT SCOTT, KS  
 PARRISH BRANDES MD, LISA K, WICHITA, KS  
 PARRISH JR MD, DAVID L, IRVING, TX  
 PARRISH MD, STEVEN, KANSAS CITY, KS  
 PARSI MD, MANUTCHEHR, PITTSBURG, KS  
 PARULKAR MD, DEEPAK S, TOPEKA, KS  
 PASCUA MD, PERCIVAL G, TOPEKA, KS  
 PASIMIO MD, ROGER S, COLUMBUS, KS  
 PASSMAN MD, STEVEN M, WICHITA, KS  
 PASTOR MD, VICTOR HUGO, EMPORIA, KS  
 PATEL MD, MAHENDRA N, TOPEKA, KS  
 PATEL MD, VINOD, TOPEKA, KS  
 PATRICK MD, FRED E, TOPEKA, KS  
 PATRON MD, RICARDO A, LIBERAL, KS  
 PATRON MD, RICARDO F, NEWTON, KS  
 PATRON MD, ROBERT R, SHAWNEE MISSION, KS  
 PATTERSON MD, JOHN R, SHAWNEE MISSION, KS  
 PATTON MD, J MICHAEL, WICHITA, KS  
 PAULS MD, DANIEL N, PARSONS, KS  
 PAULS MD, DAVID G, MANHATTAN, KS  
 PAULY MD, TIMOTHY R, HUTCHINSON, KS  
 PAXTON MD, EDWARD S, WICHITA, KS  
 PAY MD, NORMAN T, WICHITA, KS  
 PAYNE MD, J RALPH, KANSAS CITY, MO  
 PAYNE MD, ROBERT R, TOPEKA, KS  
 PAZELL MD, JOHN A, SHAWNEE MISSION, KS  
 PEARCE MD, LUNETTA M, SHAWNEE MISSION, KS  
 PEARSON MD, MARK A, LEAVENWORTH, KS  
 PEASE MD, GARY L, HUTCHINSON, KS  
 PEASTER MD, MICHAEL L, CHANUTE, KS  
 PECK MD, ROGER, GREAT BEND, KS  
 PEDERSON MD, ARNOLD M, PLAINVILLE, KS  
 PEDRAZA MD, HERNANDO, WELLINGTON, KS  
 PEEL MD, KERRY A, WICHITA, KS  
 PEERY MD, WILLIAM H, WICHITA, KS  
 PEES JR MD, GERALD B, LAWRENCE, KS  
 PEES MD, GERALD B, APOLLO BEACH, FL  
 PEFFLY MD, ELMER D, CHETOPA, KS  
 PEIL MD, MICHAEL L, PEORIA, IL  
 PELLETIER JR MD, LAWRENCE L, WICHITA, KS  
 PENCE MD, CHARLES D, WICHITA, KS  
 PENNER MD, STEVEN D, WICHITA, KS  
 PENNER MD, TIMOTHY M, CLAY CENTER, KS  
 PENNINGTON MD, KATHERINE, WICHITA, KS  
 PENTECOST MD, RICHARD L, SHAWNEE MISSION, KS  
 PENZLER MD, CINDY E, TOPEKA, KS  
 PERALES MD, MERCEDES, WICHITA, KS  
 PERDUE II MD, W LANG, TOPEKA, KS  
 PEREIRA MD, WILLY G, NEWTON, KS  
 PEREZ-TAMAYO MD, CLAUDIA, SALINA, KS  
 PERIDO MD, DOMINADOR T, ELKHART, KS  
 PERKINS MD, JACK L, HUTCHINSON, KS  
 PERKINS, HAROLD L, SHAWNEE MISSION, KS  
 PERRY JR MD, LAWRENCE L, KANSAS CITY, KS  
 PERRY MD, MARK A, SHAWNEE MISSION, KS  
 PERSONS MD, DIANE L, ROCHESTER, MN  
 PERVAIZ MD, SYED M, WICHITA, KS  
 PETELIN MD, JOSEPH B, SHAWNEE MISSION, KS  
 PETERIE MD, JERRY D, WICHITA, KS  
 PETERS MD, ERIC A, SHAWNEE MISSION, KS  
 PETERS MD, THOMAS J, WICHITA, KS  
 PETERS MD, TIMOTHY R, SILVERTON, OR  
 PETERSEN MD, GERALD D, SHAWNEE MISSION, KS  
 PETERSEN, MARK I, BONNER SPRING, KS  
 PETERSON D O, PEGGY S, MANHATTAN, KS  
 PETERSON JR MD, EVAN A, WATHENA, KS  
 PETERSON JR MD, JACK T, SHAWNEE MISSION, KS  
 PETERSON MD, DAVID A, SALINA, KS  
 PETERSON MD, HUBERT C, LIBERAL, KS  
 PETERSON MD, JACK T, MANHATTAN, KS  
 PETERSON MD, JAMES E, SALINA, KS  
 PETERSON MD, ROBERT L, TOPEKA, KS  
 PETERSON MD, STACY L, WICHITA, KS  
 PETERSON MD, STEPHEN E, TOPEKA, KS  
 PETERSON MD, VERNON J, TOPEKA, KS  
 PETRIK MD, EDWIN L, TOPEKA, KS  
 PETTAVEL MD, PAUL P, SHAWNEE MISSION, KS  
 PETTERSON MD, CECIL E, SYRACUSE, KS  
 PETTERSON MD, DENNIS C, TOPEKA, KS  
 PETTERSON MD, O'RUTH S, TOPEKA, KS  
 PETTIJOHN MD, WALTER J, GUADALAJARA JALISCO, MX  
 PFEIFER II MD, F MICHAEL, KANSAS CITY, MO  
 PFEIFFER, BRIAN D, KANSAS CITY, KS  
 PFUETZE MD, BRUCE L, SHAWNEE MISSION, KS  
 PFUETZE MD, KARL D, SHAWNEE MISSION, KS  
 PFUETZE MD, ROBERT E, TOPEKA, KS  
 PHAM, THUHA T, KANSAS CITY, KS  
 PHAN MD, ANTHONY T, CORONA, CA  
 PHELPS MD, DAVID WAYNE, FORT SCOTT, KS  
 PHELPS MD, LESLIE J, WICHITA, KS  
 PHILIPP MD, JOSEPH T, MANHATTAN, KS  
 PHILLIPS MD, DENNIS G, WICHITA, KS  
 PHILLIPS MD, WARREN G, SHAWNEE MISSION, KS  
 PHIPPS MD, CARLA B, LAWRENCE, KS  
 PHIPPS MD, JACK G, WICHITA, KS  
 PHIPPS MD, RONNY, INDEPENDENCE, KS  
 PIAZZA D O, RICHARD S, WICHITA, KS  
 PIBURN MD, MARVIN F, WICHITA, KS  
 PICKERT MD, CURTIS B, WICHITA, KS  
 PIERCE MD, CHARLES F, TOPEKA, KS  
 PIERCE MD, DONALD R, TOPEKA, KS  
 PIERCE MD, GEORGE E, KANSAS CITY, KS  
 PIERSON MD, MARK E, EMPORIA, KS  
 PIERSON MD, WEIR, MC PHERSON, KS  
 PILCHARD MD, WILLIAM A, SHAWNEE MISSION, KS  
 PINGLETON MD, WILLIAM W, SHAWNEE MISSION, KS  
 PINSKER MD, JACOB A, WICHITA, KS  
 PIPPIN MD, LYNNE K, SHAWNEE MISSION, KS  
 PIRELA-CRUZ MD, MIGUEL A, WICHITA, KS  
 PITTS MD, RONALD L, SHAWNEE MISSION, KS  
 PITTS, JEANETTE M, KANSAS CITY, KS  
 PLUMB MD, RENNE L, KANSAS CITY, KS  
 PODREBARAC MD, PIERRE, ATLANTA, GA  
 POGSON MD, GEORGE W, PITTSBURG, KS  
 POKORNY MD, JOHN C, CINCINNATI, OH  
 POLINER MD, LAWRENCE R, WICHITA, KS  
 POLING MD, TERRY L, WICHITA, KS  
 POLLMAN MD, STANLEY E, WICHITA, KS  
 POLLOCK MD, ANTHONY G A, WICHITA, KS  
 POLLY MD, RICHARD E, TOPEKA, KS  
 POOLE MD, BERNARD T, WICHITA, KS  
 PORTER MD, DAVID M, KANSAS CITY, KS  
 PORTER MD, GARRY L, WICHITA, KS  
 PORTER MD, MICHAEL G, WICHITA, KS  
 PORTER MD, ROBERT D, TOPEKA, KS  
 PORTER MD, SCOTT W, WICHITA, KS  
 PORTO JR MD, ANTHONY F, SHAWNEE MISSION, KS  
 POTTER MD, ROBERT L, KANSAS CITY, KS

POULOSE MD, ANIL K, TUCSON, AZ  
 POULTON MD, THOMAS J, TOPEKA, KS  
 POWELL II MD, BENSON M, TOPEKA, KS  
 POWELL MD, CAROL W, SHAWNEE MISSION, KS  
 POWELL MD, KENNETH A, SHAWNEE MISSION, KS  
 POWELL MD, TIMOTHY J, PITTSBURG, KS  
 POWELL MD, WILLIAM R, TOPEKA, KS  
 POWERS MD, G ROBERT, KANSAS CITY, KS  
 POWERS MD, K DEAN, WICHITA, KS  
 PRAEGER MD, MARK A, LAWRENCE, KS  
 PRASAD MD, BABU, HAYS, KS  
 PRATT, STEPHEN E, KANSAS CITY, KS  
 PREMSINGH MD, NALINI G, KANSAS CITY, KS  
 PRENDES MD, CARLOS A, SHAWNEE MISSION, KS  
 PRENTISS MD, HAROLD, NEWTON, KS  
 PRESCOTT MD, JAMES T, WICHITA, KS  
 PRESKORN MD, SHELDON H, WICHITA, KS  
 PRESTON MD, DAVID F, KANSAS CITY, KS  
 PRESTON MD, RALPH R, TOPEKA, KS  
 PRESTON MD, RICHARD, GREAT BEND, KS  
 PRETZ MD, JAMES B, KANSAS CITY, KS  
 PRICE JR MD, LAURANCE W, LAWRENCE, KS  
 PRICE MD, JAMES G, KANSAS CITY, KS  
 PRICE MD, PETER G, WINFIELD, KS  
 PRICE MD, VAUGHAN C, MC PHERSON, KS  
 PRIDDY D O, MAURICE F, JUNCTION CITY, KS  
 PRIETO MD, JORGE N, KANSAS CITY, KS  
 PROCTOR MD, ROBERT W, EL DORADO, KS  
 PROHASKA, DANIEL J, KANSAS CITY, KS  
 PROKOP MD, BRADFORD S, TOPEKA, KS  
 PRONKO MD, MICHAEL J, SHAWNEE MISSION, KS  
 PROPECK MD, SCOTT, WICHITA, KS  
 PROUD MD, G ONEIL, SHAWNEE MISSION, KS  
 PUGH MD, DAVID M, KANSAS CITY, KS  
 PULLMAN MD, NORMAN K, CONWAY, AR  
 PURINTON MD, LEW W, WICHITA, KS  
 PURKIS MD, MICHAEL D, KANSAS CITY, KS  
 PUTNAM, ANTHONY M, KANSAS CITY, MO

## Q

QAMAR MD, YUSUF, NEWTON, KS  
 QUIGLEY MD, JAMES, SHAWNEE MISSION, KS  
 QUINLAN D O, GREGORY H, FORT SCOTT, KS  
 QUINN MD, CHARLES E, KANSAS CITY, KS  
 QUINN MD, JOHN M, SHAWNEE MISSION, KS  
 QUINONES MD, ELADIO A, TAMPA, FL

## R

RABE MD, MELVIN A, LEAVENWORTH, KS  
 RAD MD, SIMA, KANSAS CITY, KS  
 RADAKOVICH, RICKY R, KANSAS CITY, KS  
 RADOVANOV MD, RADMILA, WICHITA, KS  
 RAGHAVAN MD, PARULA P, WICHITA, KS  
 RAGHAVAN MD, PRAKASH V, WICHITA, KS  
 RAINBOW-EARHART MD, KATHRYN A, TOPEKA, KS  
 RAINS MD, JEFFREY, WICHITA, KS  
 RAJEWSKI MD, RICHARD L, HAYS, KS  
 RAJU MD, A S PADMA, TOPEKA, KS  
 RALSTIN MD, JAMES H, KANSAS CITY, KS  
 RAMIREZ MD, AUGUSTO H, PITTSBURG, KS  
 RAMIREZ MD, IRENE P, PITTSBURG, KS  
 RAMSEY MD, BARTLETT W, TOPEKA, KS  
 RAMSEY, TRACY C, WICHITA, KS  
 RANDALL MD, GEORGE R, WICHITA, KS  
 RANDALL MD, GORDON R, TOPEKA, KS  
 RANKIN MD, KRISTI, SHAWNEE MISSION, KS  
 RANSDALL MD, EDGAR C, TOPEKA, KS  
 RANSOM MD, JAMES H, TOPEKA, KS  
 RANSOM MD, WILLARD B, OTTAWA, KS  
 RAO MD, MEENA, HUTCHINSON, KS  
 RASMUSSEN MD, THOMAS J, SHAWNEE MISSION, KS  
 RATE MD, PEGGY S, HUTCHINSON, KS  
 RATE MD, ROBERT G, HUTCHINSON, KS  
 RATHBUN MD, KATHARINE C, TOPEKA, KS  
 RATZLAFF, JAMES D, WICHITA, KS  
 RAUSA JR MD, FRANCISCO C, WICHITA, KS  
 RAUSCH MD, MICHAEL A, EL DORADO, KS  
 RAWCLIFFE JR MD, ROBERT A, WICHITA, KS  
 RAY MD, DAVID J, CONCORDIA, KS  
 RAZEK MD, HANA A, WICHITA, KS  
 RAZEK MD, ZACK A, WICHITA, KS  
 READ MD, WILLIAM T, COFFEYVILLE, KS  
 READER MD, G WHITNEY, WICHITA, KS



REALS MD, THOMAS C, WICHITA, KS  
 REALS MD, WILLIAM J, WICHITA, KS  
 REAZIN MD, WALTER L, WICHITA, KS  
 RECKLING MD, FREDERICK W, KANSAS CITY, KS  
 REDDI MD, RAGHUNATH P, WICHITA, KS  
 REDDY MD, B N, HILL CITY, KS  
 REDDY MD, P JAGANNADHA, HILL CITY, KS  
 REDDY MD, SATTI S, GREAT BEND, KS  
 REDDY MD, SUGUNA V, EL DORADO, KS  
 REDDY MD, VENUMBACA C, EL DORADO, KS  
 REDMON DO, MARY L, KANSAS CITY, KS  
 REEB MD, RONALD JOSEPH, KANSAS CITY, KS  
 REECE MD, A THOMEN, GARDNER, KS  
 REECE MD, RICHARD J, SALINA, KS  
 REED JR MD, WILLIAM O, SHAWNEE MISSION, KS  
 REED MD, A J, WICHITA, KS  
 REED MD, D CRAMER, WICHITA, KS  
 REED MD, DAVID D, WICHITA, KS  
 REED MD, JAMES S, LAWRENCE, KS  
 REED MD, WILLIAM R, WICHITA, KS  
 REESE MD, JOHN L, LAWRENCE, KS  
 REEVES (MC)USNR, CAPT C S, GREAT LAKES, IL  
 REGAS, STEPHEN L, KANSAS CITY, KS  
 REICHENBERGER MD, RONALD J, WICHITA, KS  
 REIFSCHNEIDER D O, JOHN S, SHAWNEE MISSION, KS  
 REILE OBLANDER, DANA, KANSAS CITY, KS  
 REINHARDT-WULF MD, TAISSIA L, GARDEN PLAIN, KS  
 REINKING MD, VICTOR E, TOPEKA, KS  
 REISMAN MD, MICHAEL A, WICHITA, KS  
 REISWIG MD, GARY W, WICHITA, KS  
 REISWIG MD, JEFFREY S, WICHITA, KS  
 REIVICH MD, RONALD S, KANSAS CITY, MO  
 RELIHAN MD, DONALD A, WICHITA, KS  
 REMPEL MD, JOHN H, WICHITA, KS  
 RENNER MD, PATRICK A, SHAWNEE MISSION, KS  
 REPROGLE MD, CHARLES B, GREAT BEND, KS  
 RETHORST MD, RICHARD D, PITTSBURG, KS  
 RETTELE MD, GARRICK A, LITTLE ROCK, AR  
 REUSSER MD, LAYNE M, ALBUQUERQUE, NM  
 REVELS MD, HARRY, SHAWNEE MISSION, KS  
 REYES JR MD, FRANCISCO A, OTTAWA, KS  
 REYMOND MD, RALPH D, TOPEKA, KS  
 REYNOLDS MD, MICHAEL G, SHAWNEE MISSION, KS  
 REYNOLDS MD, TERESA A, WICHITA, KS  
 REYNOSO MD, LANCE A, OTTAWA, KS  
 RHOADS MD, ANNE C, OLATHE, KS  
 RHOADS MD, JAMES P, TOPEKA, KS  
 RHOADS MD, JEFFREY P, TOPEKA, KS  
 RHODE MD, MICHAEL G, BILOXI, MS  
 RHODEN MD, CURTIS H, WICHITA, KS  
 RHODES MD, IVAN E, WICHITA, KS  
 RHODES MD, JAMES B, KANSAS CITY, KS  
 RHODES MD, LOWELL M, WICHITA, KS  
 RICCI MD, ROBERT L, TOPEKA, KS  
 RICE MD, BERNARD F, SHAWNEE MISSION, KS  
 RICE MD, RANDALL B, SEATTLE, WA  
 RICHARDS MD, DALLAS LEE, HAYS, KS  
 RICHARDS MD, JON F, SALINA, KS  
 RICHARDS, DAVID A, SHAWNEE MISSION, KS  
 RICHARDSON II D O, LESTER E, SHAWNEE MISSION, KS  
 RICHARDSON MD, JAY L, SHAWNEE MISSION, KS  
 RICHARDSON, KAREN M, SHAWNEE MISSION, KS  
 RICHMAN MD, DANA R, HUTCHINSON, KS  
 RICHMAN MD, DAVID S, HUTCHINSON, KS  
 RICHTER MD, DON G, SHAWNEE MISSION, KS  
 RICK JR MD, GREGORY G, SHAWNEE MISSION, KS  
 RICKETTS-KINGFISHER MD, DAVID J, TOPEKA, KS  
 RIDER MD, JAMES W, ATCHISON, KS  
 RIDGWAY MD, LEAH D, SHAWNEE MISSION, KS  
 RIDGWAY MD, LOUIS E, KANSAS CITY, KS  
 RIEG MD, KEVIN P, PANAMA CITY BEACH, FL  
 RIEGER MD, ERNEST H, WICHITA, KS  
 RIEKHOF MD, PAUL L, SHAWNEE MISSION, KS  
 RIFFEL MD, LAWRENCE D, SHAWNEE MISSION, KS  
 RIGGS MD, KAY R, WICHITA, KS  
 RINDT MD, PHILLIP L, FREDONIA, KS  
 RIORDAN MD, HUGH D, WICHITA, KS  
 RISING MD, JESSE D, KANSAS CITY, MO  
 RIVERA D O, DARLA K, WICHITA, KS  
 RIVERA-ORTIZ MD, EPIFANIO, WICHITA, KS  
 RIZZA MD, ROBERT G, HALSTEAD, KS  
 ROACH MD, NEIL E, WICHITA, KS  
 ROAN MD, YEAI, WICHITA, KS  
 ROBERSON MD, CHERYL L, BLUE SPRINGS, MO  
 ROBERTS D O, ROGER W, WICHITA, KS  
 ROBERTS MD, AUDREY M, NEWTON, KS  
 ROBERTS MD, DANIEL K, WICHITA, KS  
 ROBERTS MD, SHELDON D, GARDEN CITY, KS  
 ROBERTS MD, WARREN E, TOPEKA, KS

ROBERTSON MD, EDWARD J, SHAWNEE MISSION, KS  
 ROBERTSON MD, JOSEPH K, WICHITA, KS  
 ROBICHAUX MD, JOHN C, WICHITA, KS  
 ROBINSON MD, DAVID B, TOPEKA, KS  
 ROBINSON MD, DAVID W, SHAWNEE MISSION, KS  
 ROBINSON MD, G DONALD, WICHITA, KS  
 ROBINSON MD, JOHN D, SHAWNEE MISSION, KS  
 ROBINSON MD, RALPH G, KANSAS CITY, KS  
 ROBINSON MD, ROBERT H, WICHITA, KS  
 ROBINSON MD, SCOTT A, TOPEKA, KS  
 ROBL MD, DAVID A, WICHITA, KS  
 ROCKEFELLER MD, JOHN D, TOPEKA, KS  
 RODDY D O, WILLIAM M, WICHITA, KS  
 RODERICK MD, JAMES E, SALINA, KS  
 RODGERS MD, CHRISTOPHER P, HUTCHINSON, KS  
 RODRIGUEZ MD, PAUL L, GARDEN CITY, KS  
 RODRIGUEZ MD, WILMAR C, EL DORADO, KS  
 RODRIGUEZ-TOCKER MD, LILIA, WICHITA, KS  
 ROEDER MD, ROBERT E, TOPEKA, KS  
 ROGERS MD, BECKY J, KANSAS CITY, KS  
 ROHLMAN MD, VALERIE C, WICHITA, KS  
 ROMALIS MD, BRIAN E, WICHITA, KS  
 ROMEISER MD, REX S, SALINA, KS  
 ROMEREIM MD, MARK E, ANDOVER, KS  
 ROMERO JR MD, FRANK, IOWA CITY, IA  
 ROMONDO MD, STEVEN A, OLATHE, KS  
 ROOK MD, LEE E, KANSAS CITY, KS  
 ROONEY D O, MICHAEL N, DODGE CITY, KS  
 ROPE MD, DOUGLAS M, SHAWNEE MISSION, KS  
 RORABAUGH MD, DONALD C, ABILENE, KS  
 ROSADO MD, ANTONIO, MIAMI, FL  
 ROSALES MD, J EDGAR, SALINA, KS  
 ROSE MD, DONALD L, BELLA VISTA, AR  
 ROSE MD, GRAHAM C, MANHATTAN, KS  
 ROSE MD, SHELBY D, WICHITA, KS  
 ROSE, THOMAS A, DOUGLASS, KS  
 ROSEBRAUGH MD, CURTIS J, WICHITA, KS  
 ROSEN MD, CARL H, PRATT, KS  
 ROSEN MD, DAVID, WICHITA, KS  
 ROSEN MD, DONALD E, TOPEKA, KS  
 ROSENBERG MD, STANTON L, SHAWNEE MISSION, KS  
 ROSENBERG MD, THOMAS F, WICHITA, KS  
 ROSENTHAL MD, HOWARD G, KANSAS CITY, KS  
 ROSENTHAL MD, RICHARD H, SHAWNEE MISSION, KS  
 ROSENTHAL MD, STANTON J, KANSAS CITY, KS  
 ROSIN MD, ROBERT L, SCOTT CITY, KS  
 ROSS IV MD, ALBERT M, WICHITA, KS  
 ROSS MD, DAVID K, ARKANSAS CITY, KS  
 ROSS MD, DENNIS LEE, WICHITA, KS  
 ROSS MD, JACK L, LAWRENCE, KS  
 ROTERT MD, LARRY, TOPEKA, KS  
 ROTH MD, ALAN E, KANSAS CITY, KS  
 ROTHSTEIN MD, TERRY B, PARSONS, KS  
 ROWLAND MD, JOHN C, WICHITA, KS  
 ROWLETT MD, JACK G, PAOLA, KS  
 ROY MD, WILLIAM R, TOPEKA, KS  
 RUBIN MD, HERBERT M, SHAWNEE MISSION, KS  
 RUBLE JR MD, JAMES L, OVERBROOK, KS  
 RUBLE MD, REBECCA A, KANSAS CITY, KS  
 RUCKER MD, MARK R, WICHITA, KS  
 RUHLEN MD, JAMES L, OLATHE, KS  
 RUHLEN MD, THOMAS F, OLATHE, KS  
 RUIZ MD, CARLOS M, GREAT BEND, KS  
 RUMBAQA, PHILIP L, KANSAS CITY, KS  
 RUMISEK MD, JOHN D, WICHITA, KS  
 RUNDQUIST MD, BETH, LAWRENCE, KS  
 RUNNELS MD, JOHN B, PALO ALTO, CA  
 RUSSELL MD, PHILIP W, WICHITA, KS  
 RUTNGAMLUG MD, LUECHA, HAYS, KS  
 RUZICKA MD, LAWRENCE J, CONCORDIA, KS  
 RYAN JR MD, RAYMOND J, CHARLESTON, SC  
 RYAN MD, JOHN M, MARYSVILLE, KS  
 RYAN MD, MICHAEL E, SHAWNEE MISSION, KS  
 RYAN MD, SHERRY L, RAYTOWN, MO  
 RYMER MD, ROBERT A, SHAWNEE MISSION, KS

## S

SABA MD, MEKKI M, FORT SCOTT, KS  
 SABANGAN MD, JOEL S, WICHITA, KS  
 SABIN JR MD, GEORGE M, WICHITA, KS  
 SABOOR MD, SYED A, WICHITA, KS  
 SACK MD, JOSEPH M, WICHITA, KS  
 SADIQ MD, SULEMAN, WICHITA, KS  
 SAJADI, SEYED A, KANSAS CITY, KS  
 SAMUEL MD, CHANDY C, WINFIELD, KS

SAMUEL MD, SAMSON P, SHAWNEE MISSION, KS  
 SANCHEZ MD, JOSE J, WICHITA, KS  
 SANCHEZ MD, ROGELIO, TOPEKA, KS  
 SANDERS MD, J ALAN, LAWRENCE, KS  
 SANDNESS MD, KATHLEEN M, PITTSBURG, KS  
 SANTOS MD, FERMIN M, LEAVENWORTH, KS  
 SANTOS MD, JOAQUIN G, WICHITA, KS  
 SANTOSCOY MD, GILBERT S, WICHITA, KS  
 SARGENT D O, DAVID W, WICHITA, KS  
 SARGENT MD, JOSEPH D, TOPEKA, KS  
 SATHYANARAYANA MD, SARASWATHI, SHAWNEE MISSION, KS  
 SATYA-MURTI MD, SATYA, PARSONS, KS  
 SAVAGE MD, W RICHARD, HUTCHINSON, KS  
 SAWKAR MD, LAXMIDAS A, SHAWNEE MISSION, KS  
 SAWYER MD, TIMOTHY T, TOPEKA, KS  
 SAXER MD, JOHN J, SHAWNEE MISSION, KS  
 SAYLOR MD, EDWARD H, TOPEKA, KS  
 SAYLOR MD, MARK, TOPEKA, KS  
 SAYLOR MD, RANDEL L, HUTCHINSON, KS  
 SAYLOR MD, STEPHEN, TOPEKA, KS  
 SCAMMAN MD, W WIKE, TOPEKA, KS  
 SCANLAN MD, TIMOTHY M, WICHITA, KS  
 SCANLON JR MD, JAMES H, HADDAM, CT  
 SCHAPER MD, DANIEL C, OLATHE, KS  
 SCHEEL MD, BRADLEY J, HUTCHINSON, KS  
 SCHEFFER MD, RUSSELL E, EVANS, GA  
 SCHEINBERG MD, KENNETH, WICHITA, KS  
 SCHEKALL MD, MICHAEL J, HUTCHINSON, KS  
 SCHELLINGER MD, RICHARD P, EMPORIA, KS  
 SCHERMOLY MD, MARTIN V, OLATHE, KS  
 SCHILTZ MD, FRANCES, LA GRANGE, IL  
 SCHIMKE MD, R NEIL, KANSAS CITY, KS  
 SCHLACHTER MD, ERNEST R, WICHITA, KS  
 SCHLAGECK MD, JOSEPH G, WICHITA, KS  
 SCHLEMMER MD, ROGER B, PITTSBURG, KS  
 SCHLICHER MD, JOHN E, WICHITA, KS  
 SCHLICHTER MD, KIMBERLY A, SHAWNEE MISSION, KS  
 SCHLOERB MD, PAUL R, KANSAS CITY, KS  
 SCHLOESSER CLARK MD, ANNE, NOANK, CT  
 SCHLOESSER MD, HARVEY L, TOPEKA, KS  
 SCHLOESSER MD, PATRICIA T, TOPEKA, KS  
 SCHLOESSER MD, PETER E, TOPEKA, KS  
 SCHLOSSER, DANIEL B, KANSAS CITY, KS  
 SCHLOZMAN MD, DANIEL L, KANSAS CITY, MO  
 SCHLUETER MD, JOHN J, WICHITA, KS  
 SCHMEIDLER MD, DAVID A, ARKANSAS CITY, KS  
 SCHMIDT MD, HERBERT R, NEWTON, KS  
 SCHMIDT MD, LADONA, SALINA, KS  
 SCHMIDT MD, MARTY L, FORT SCOTT, KS  
 SCHMIDT MD, MICHAEL J, TOPEKA, KS  
 SCHMIDT MD, RAMON WARNER, SALINA, KS  
 SCHMIDT, DARYN R, WICHITA, KS  
 SCHNEIDER MD, SETH A, WICHITA, KS  
 SCHNEIDER, DAVID J, KANSAS CITY, KS  
 SCHNELLE MD, JOACHIM, WICHITA, KS  
 SCHNIEROW, BRADLEY J, SHAWNEE MISSION, KS  
 SCHNOEBELN MD, RENE E, KINSLEY, KS  
 SCHNOSE MD, GREGORY D, LAWRENCE, KS  
 SCHOELING MD, RICK D, ARKANSAS CITY, KS  
 SCHOPF MD, CLIFTON C, WICHITA, KS  
 SCHOWENGERDT MD, ANDREW W, MONTEZUMA, KS  
 SCHOWENGERDT MD, DANIEL B, KINGMAN, KS  
 SCHRADER, JEAN M, KANSAS CITY, KS  
 SCHRAM MD, PETER C, TOPEKA, KS  
 SCHREPFFER MD, ROSEMARY, SHAWNEE MISSION, KS  
 SCHROEDER MD, JOEL, KANSAS CITY, KS  
 SCHROEDER MD, SANDRA K, VERDI, NV  
 SCHROEDER MD, SYDNEY O, LAWRENCE, KS  
 SCHROEDER, MELISSA A, KANSAS CITY, KS  
 SCHROLL MD, JOHN T, SHAWNEE MISSION, KS  
 SCHUETZ MD, PERRY N, GREAT BEND, KS  
 SCHUKAI, KATHERINE BRILLHART, SHAWNEE MISSION, KS  
 SCHUKMAN MD, JAY S, GREAT BEND, KS  
 SCHULTZ MD, CHARLES CAMERON, HAYS, KS  
 SCHULTZ, JEFFREY J, SHAWNEE MISSION, KS  
 SCHUTZ MD, RALPH A, SHAWNEE MISSION, KS  
 SCHWARTING MD, J STEVEN, ABILENE, KS  
 SCHWARTZ MD, ANDREW M, SHAWNEE MISSION, KS  
 SCHWARTZ MD, EUGENE W, DODGE CITY, KS  
 SCHWARTZ MD, V DEAN, WICHITA, KS  
 SCHWEGLER MD, RAYMOND A, LAWRENCE, KS  
 SCHWEGLER MD, RAYMOND A, KANSAS CITY, KS  
 SCHWERTFEGER MD, TY L, SHAWNEE MISSION, KS  
 SCHWORM MD, CURTIS P, KANSAS CITY, KS  
 SCLAR MD, WILLIAM C, SHAWNEE MISSION, KS  
 SCOTT MD, ALEX, JUNCTION CITY, KS  
 SCOTT MD, CHESTER E, SALINA, KS  
 SCOTT MD, DUANE, BELLEVILLE, KS



SCOTT MD, TIMOTHY R, HUTCHINSON, KS  
 SCOTT MD, WILLIAM H, WICHITA, KS  
 SCOTTEN MD, MITZI S, SHAWNEE MISSION, KS  
 SEARIGHT MD, LOWELL R, HIAWATHA, KS  
 SEARLE MD, ROBERT E, PITTSBURG, KS  
 SEATON MD, ROBERT D, SALINA, KS  
 SEBREE MD, STEVEN G, SALINA, KS  
 SEEBER MD, AMY D, WICHITA, KS  
 SEELEY MD, JAMES C, ST MARYS, KS  
 SEERY MD, DONALD S, WICHITA, KS  
 SEGEBRECHT MD, STEPHEN L, LAWRENCE, KS  
 SEGIE MD, F RONALD, PITTSBURG, KS  
 SEHDEV MD, JOAN, TOPEKA, KS  
 SEHDEV MD, PAUL S, TOPEKA, KS  
 SEHDEV, KIRAN, KANSAS CITY, KS  
 SEIBEL MD, BRENT E, JACKSONVILLE, FL  
 SEIDEL MD, DONALD R, TULSA, OK  
 SEITZ MD, RICHARD F, SHAWNEE MISSION, KS  
 SELIGSON MD, MICHAEL S, SHAWNEE MISSION, KS  
 SELLSBERG MD, MARTIN E, WICHITA, KS  
 SELLERS D O, SCOTT, HUTCHINSON, KS  
 SELLERS MD, JEFF D, TOPEKA, KS  
 SEN SARMA MD, PRONAB K, WICHITA, KS  
 SENNE HUNT, DIANE, WICHITA, KS  
 SEVIER MD, SAMUEL M, MUSKOGEE, OK  
 SHAAD MD, DOROTHY J, SHAWNEE MISSION, KS  
 SHAFER MD, JAMES J, SALINA, KS  
 SHAFER MD, PRESTON J, PAYSON, AZ  
 SHAFER MD, KATHLEEN BRAY, SHAWNEE MISSION, KS  
 SHAH MD, ARJAV A, SHAWNEE MISSION, KS  
 SHAH MD, ASHOK H, INDEPENDENCE, KS  
 SHAH MD, MIAN, LARNED, KS  
 SHAH MD, MUKHTAR H, WICHITA, KS  
 SHAH MD, NASREEN, LARNED, KS  
 SHAH MD, SUBHASH H, WICHITA, KS  
 SHAHZADA MD, KAMRAN, ARKANSAS CITY, KS  
 SHAMPAIN MD, ERIC L, WICHITA, KS  
 SHAPIRO MD, WILLIAM M, WICHITA, KS  
 SHARMA MD, ARUN L, PARSONS, KS  
 SHARP MD, CHAD E, WICHITA, KS  
 SHAW MD, PAMELA K, KANSAS CITY, KS  
 SHAW MD, RICHARD C, WICHITA, KS  
 SHEAFOR MD, DOUGLAS, TOPEKA, KS  
 SHEAR MD, JEFFREY M, EMPORIA, KS  
 SHEARS MD, ROBERT N, HUTCHINSON, KS  
 SHEEHY MD, PATRICK G, TOPEKA, KS  
 SHEERN MD, MARK DOUGLAS, ABILENE, KS  
 SHEFFER MD, KEITH D, OLATHE, KS  
 SHEFFIELD MD, MICHAEL A, MANHATTAN, KS  
 SHELL MD, JOHN R, KANSAS CITY, MO  
 SHELLITO MD, JOHN G, WICHITA, KS  
 SHELLITO MD, JOHN L, WICHITA, KS  
 SHELTON MD, STEPHEN E, TOPEKA, KS  
 SHEPPARD MD, ROBERT G, SMITH CENTER, KS  
 SHERARD MD, JOHN L, COTTONWOOD FALLS, KS  
 SHERARD MD, SARAH L, EMPORIA, KS  
 SHERBON MD, MARY L, WICHITA, KS  
 SHERIDAN MD, RANDY M, SHAWNEE MISSION, KS  
 SHERWOOD JR MD, CLARENCE E, TOPEKA, KS  
 SHETLAR D O, JOHN M, SENECA, KS  
 SHEU MD, W ERIC, TOPEKA, KS  
 SHIAO, TSENG-KUO, SHAWNEE MISSION, KS  
 SHIDELER, BARBARA M, SHAWNEE MISSION, KS  
 SHIELD MD, CHARLES, WICHITA, KS  
 SHIELDS JR MD, JAMES M, EL DORADO, KS  
 SHIELDS MD, THOMAS M, MANHATTAN, KS  
 SHIMSHAK MD, KAREN S, SHAWNEE MISSION, KS  
 SHIPPEY MD, DEAN U, WINFIELD, KS  
 SHIREMAN MD, PETER K, KANSAS CITY, KS  
 SHIVEL MD, DAVID G, GREAT BEND, KS  
 SHIVELY MD, ROBERT M, ELLINWOOD, KS  
 SHOFFNER MD, RICHARD W, WICHITA, KS  
 SHRADER MD, C ERIC, WICHITA, KS  
 SHRADER MD, DOYLE A, WICHITA, KS  
 SHRIWASE MD, TOM L, ATCHISON, KS  
 SHUCK D O, MICHAEL W, WICHITA, KS  
 SHULL D O, MICHAEL W, GARDEN CITY, KS  
 SHURTZ MD, GLEN L, WICHITA, KS  
 SIEGLE MD, LORA A, COUNCIL GROVE, KS  
 SIEMENS MD, RICHARD A, LYONS, KS  
 SIFERS MD, TIMOTHY M, SHAWNEE MISSION, KS  
 SIFFORD MD, R LAWRENCE, WICHITA, KS  
 SILER MD, EUGENE T, LAWRENCE, KS  
 SILER MD, JAMES W, WICHITA, KS  
 SILLS MD, CHARLES T, NEWTON, KS  
 SILVA MD, CATHERINE, LEAVENWORTH, KS  
 SILVER MD, BRADD J, SHAWNEE MISSION, KS  
 SILZER MD, ROBERT R, KANSAS CITY, MO  
 SIMMONS MD, MARK S, SHAWNEE MISSION, KS  
 SIMMONS MD, MICHAEL R, SHAWNEE MISSION, KS  
 SIMMONS MD, ROBERT E, NEWTON, KS

SIMMONS, SHAWN T, HAYSVILLE, KS  
 SIMMS MD, DAVID A, WICHITA, KS  
 SIMON MD, STEVEN M, SHAWNEE MISSION, KS  
 SIMONE MD, JOSEPH N, SHAWNEE MISSION, KS  
 SIMONY-SCOLOFSKY MD, M ANN, SHAWNEE MISSION, KS  
 SIMPSON MD, ROBERT LIMBAUGH, QUINCY, IL  
 SIMPSON MD, TOM C, STERLING, KS  
 SIMPSON MD, WILLIAM S, TOPEKA, KS  
 SINCLAIR MD, RICHARD H, SHAWNEE MISSION, KS  
 SINGER MD, GLEN D, IOLA, KS  
 SINGH MD, GIRVAR, ARKANSAS CITY, KS  
 SINGH, RAHUL P, KANSAS CITY, KS  
 SINN MD, KRISTINA J, FORT WORTH, TX  
 SINNING MD, GARY, HIAWATHA, KS  
 SISK MD, PHILLIP B, TOPEKA, KS  
 SIWEK MD, CHRISTOPHER W, EL DORADO, KS  
 SKAER MD, STANLEY ALLEN, EUREKA, KS  
 SKIBBA MD, RICHARD M, WICHITA, KS  
 SLAGLE MD, GENELLE J, SHAWNEE MISSION, KS  
 SLAUGHTER , JERRY, TOPEKA, KS  
 SLOO MD, MILO G, SALINA, KS  
 SLUTSKY MD, LAWRENCE J, WICHITA, KS  
 SMITH D O, JOHN P, WICHITA, KS  
 SMITH D O, JAMES A M, WICHITA, KS  
 SMITH JR MD, FLOYD L, COLBY, KS  
 SMITH MD, ALVIN L, WICHITA, KS  
 SMITH MD, ANN I, OLATHE, KS  
 SMITH MD, BOYD E, SALINA, KS  
 SMITH MD, BRUCE G, ARKANSAS CITY, KS  
 SMITH MD, DALE C, SHAWNEE MISSION, KS  
 SMITH MD, DAVID E, SALINA, KS  
 SMITH MD, DONALD J, SHAWNEE MISSION, KS  
 SMITH MD, JACQUELINE J, SHAWNEE MISSION, KS  
 SMITH MD, JOHN D, SALINA, KS  
 SMITH MD, JON A, SALINAS, CA  
 SMITH MD, LINDALL E, WICHITA, KS  
 SMITH MD, MARGARET L, KANSAS CITY, KS  
 SMITH MD, MARK A, WICHITA, KS  
 SMITH MD, MICHAEL L, MADISON HEIGHTS, MI  
 SMITH MD, NEWTON C, ARKANSAS CITY, KS  
 SMITH MD, PERRY MILTON, GREAT BEND, KS  
 SMITH MD, RACHEL S, MANHATTAN, KS  
 SMITH MD, THOMAS W, HUTCHINSON, KS  
 SMITH MD, WILLIAM E, WICHITA, KS  
 SMITH MD, WILLIAM P, SHAWNEE MISSION, KS  
 SMITH-KING MD, MAUREEN M, KANSAS CITY, KS  
 SMITH, HEATHER E, KANSAS CITY, KS  
 SMITH, KOLETTE L, KANSAS CITY, KS  
 SNARR MD, JACK W, TOPEKA, KS  
 SNIDER MD, BRUCE B, OLATHE, KS  
 SNODELL MD, FIRMIN E, SHAWNEE MISSION, KS  
 SNODGRASS MD, TED C, WICHITA, KS  
 SNOW JR MD, ARTHUR D, SHAWNEE MISSION, KS  
 SNOW MD, DONALD L, LEAVENWORTH, KS  
 SNOWBARGER MD, MARVIN D, EMPORIA, KS  
 SNYDER MD, GREGG M, WICHITA, KS  
 SNYDER MD, JULIE, ALBUQUERQUE, NM  
 SNYDER MD, RICHARD H, OLATHE, KS  
 SNYDER MD, STEPHANIE F, WICHITA, KS  
 SNYDER MD, THOMAS E, KANSAS CITY, KS  
 SNYDER, HEIDI L, KANSAS CITY, KS  
 SOLLO MD, DAVID G, WICHITA, KS  
 SOLLO MD, NATALIE R, WICHITA, KS  
 SOLOMON MD, HERMAN, WICHITA, KS  
 SOLTZ MD, ROBERT A, WICHITA, KS  
 SOMERA MD, JOSE D, ELKHART, KS  
 SOMERS MD, MARVIN M, WICHITA, KS  
 SONGER MD, HERBERT L, ABILENE, KS  
 SONTHEIMER MD, DANIEL L, KANSAS CITY, KS  
 SOSINSKI MD, RICHARD F, LAWRENCE, KS  
 SOUCEK MD, CHARLES D, KANSAS CITY, KS  
 SOURK MD, ROBERT L, HUTCHINSON, KS  
 SPANGLER MD, HENRY E, TOPEKA, KS  
 SPANN MD, RICHARD W, WICHITA, KS  
 SPARKS MD, STEPHEN T, WICHITA, KS  
 SPEARMAN MD, JESSE L, SAN DIEGO, CA  
 SPEARS MD, CHESTER A, WICHITA, KS  
 SPEED MD, JAMES K, WICHITA, KS  
 SPEER MD, LELAND, KANSAS CITY, KS  
 SPEER MD, LOUIS N, OTTAWA, KS  
 SPENCER MD, JOHN HAROLD, FORT SCOTT, KS  
 SPENCER MD, JOHN P, HUTCHINSON, KS  
 SPENCER MD, MILLARD C, TOPEKA, KS  
 SPENCER MD, WAYNE E, TOPEKA, KS  
 SPERRY MD, ROBERT E, RICHMOND, VA  
 SPIEKER MD, JOHN B, KANSAS CITY, KS  
 SPIELDOCH MD, RISA L, SAINT LOUIS, MO  
 SPITTLER MD, LEO J, SHAWNEE MISSION, KS  
 SPITZER MD, JEROME S, HUTCHINSON, KS  
 SPRADLIN MD, MICHAEL L, SHAWNEE MISSION, KS  
 SPRATT MD, DENNIS P, OTTAWA, KS

SPRINGER MD, MARK J, WICHITA, KS  
 ST CLAIR D O, DWIGHT, WICHITA, KS  
 STAATS MD, RODNEY M, WICHITA, KS  
 STACEY MD, KIMBALL, INDEPENDENCE, KS  
 STADALMAN MD, ROSS EUGENE, HAYS, KS  
 STAFFORD MD, ROBERT W, HUTCHINSON, KS  
 STAMPS MD, PHIL, WICHITA, KS  
 STANDLEE MD, TIM E, OLATHE, KS  
 STANG MD, PATRICK W, GREAT BEND, KS  
 STANGA MD, JAMES A, WICHITA, KS  
 STANLEY MD, KENNETH E, BIG SPRING, TX  
 STANLEY MD, REX C, PAOLA, KS  
 STARK MD, JAMES R, WICHITA, KS  
 STARKEY MD, DAVID J, EVERETT, WA  
 STARKEY MD, JERALD L, RUSSELL, KS  
 STASS-ISERN MD, MERRILL, SHAWNEE MISSION, KS  
 STECH MD, JOSEPH M, ANDALE, KS  
 STECHSCHULTE MD, DANIEL J, KANSAS CITY, KS  
 STECKLEY MD, RICHARD A, WICHITA, KS  
 STEELBERG MD, ELSIE, WICHITA, KS  
 STEELE MD, CLARENCE H, KANSAS CITY, KS  
 STEER MD, PHYLLIS L, KANSAS CITY, KS  
 STEEVES MD, JOHN H, EMPORIA, KS  
 STEHR MD, CHRISTIAN H, RAYTOWN, MO  
 STEICHEN MD, EDWARD F, KEARNEY, NE  
 STEIN MD, JOSEPH M, TOPEKA, KS  
 STEIN MD, MATTHEW, LAWRENCE, KS  
 STEIN MD, PAUL S, WICHITA, KS  
 STEINBERGER MD, RICHARD E, WICHITA, KS  
 STEINES MD, MICHAEL W, KANSAS CITY, KS  
 STEINZEIG MD, SHERMAN M, SHAWNEE MISSION, KS  
 STEMBRIDGE MD, TRAVIS W, WICHITA, KS  
 STEPHANZ JR MD, GERALD B, WICHITA, KS  
 STEPHENS D O, G MARCUS, MINNEOLA, KS  
 STEPHENS MD, CHARLES, MINNEOLA, KS  
 STEPHENSON MD, LUCILLE C, ST FRANCIS, KS  
 STEVENS MD, WM. MICHAEL, WICHITA, KS  
 STEVENS MD, LEAH J, LEAVENWORTH, KS  
 STEVENS MD, MILDRED J, GARNETT, KS  
 STEVENS MD, PHILIP L, TONGANOXIE, KS  
 STEVENS MD, RONALD, NEWTON, KS  
 STEVENS, AMY K, KANSAS CITY, KS  
 STEWARD, BRENT E, SHAWNEE MISSION, KS  
 STEWART MD, DANIEL L, KANSAS CITY, KS  
 STILLIONS, DUANE M, KANSAS CITY, KS  
 STIRLING, CORY J, KANSAS CITY, KS  
 STITES MD, SANDRA R, SHAWNEE MISSION, KS  
 STOCK MD, KARL W, TOPEKA, KS  
 STOFER MD, BERT E, PEORIA, AZ  
 STOFFER MD, ROBERT P, WICHITA, KS  
 STONE MD, CHESTER W, EMPORIA, KS  
 STONE MD, G REX, MANHATTAN, KS  
 STONE MD, GRANT C, ATTICA, KS  
 STOSKOPF MD, LAWRENCE E, SALINA, KS  
 STOUT MD, JAMES M, HUTCHINSON, KS  
 STOUT MD, NILES M, LYNDON, KS  
 STPETER, DAVID A, KANSAS CITY, KS  
 STREET MD, DAVID E, WICHITA, KS  
 STREIT MD, JEROME G, WICHITA, KS  
 STRICKLAND MD, JOHN T, SHAWNEE MISSION, KS  
 STRICKLAND MD, M H VAN, WICHITA, KS  
 STRIEBINGER MD, CHARLES M, SHAWNEE MISSION, KS  
 STRINGFIELD MD, SCOTT L, LYONS, KS  
 STRUTZ MD, WILLIAM C, LEAVENWORTH, KS  
 STRYKER JR MD, HENRY B, CONCORDIA, KS  
 STUART MD, REGINA K, TOPEKA, KS  
 STUBBLEFIELD MD, CHARLES T, KANSAS CITY, KS  
 STUBLER MD, DANIEL K, WAUWATOSA, WI  
 STUCKEY MD, CHARLES E, SHAWNEE MISSION, KS  
 STUCKY MD, DEAN E, MEDICINE LODGE, KS  
 STUEWE MD, BRAD R, SALINA, KS  
 STUMP MD, HARL G, HAYS, KS  
 STURGEON MD, JOHN B, SHAWNEE MISSION, KS  
 STURICH MD, JORGE M, WINFIELD, KS  
 SUERO MD, JAMES A, LAJOLLA, CA  
 SUERO MD, JESUS T, WICHITA, KS  
 SUFI MD, M ASHRAF, TOPEKA, KS  
 SUFI MD, OASER A, TOPEKA, KS  
 SUGAR MD, ROBERT L, SHAWNEE MISSION, KS  
 SUITER MD, DANIEL JAY, PRATT, KS  
 SULLIVAN JR MD, HENRY B, SHAWNEE MISSION, KS  
 SULLIVAN MD, CORNELIUS J P, FISHKILL, NY  
 SULLIVAN MD, LEONARD L, WICHITA, KS  
 SULLIVAN MD, TOM G, SHAWNEE MISSION, KS  
 SUMMERHILL, WENDY L, KANSAS CITY, KS  
 SUMNER MD, JOYCE R, HUTCHINSON, KS  
 SUMNER MD, MARION M, HUTCHINSON, KS  
 SUMNER MD, RALPH N, FREDONIA, KS  
 SUMPTER MD, MATTHEW T, SHAWNEE MISSION, KS  
 SUNDBYE MD, KEVIN R, TOPEKA, KS



SUPPES MD, KIMBERLY C, LAWRENCE, KS  
SUWANABHAND MD, CHALAW, LA CROSSE, KS  
SVOBODA MD, CHARLES R, CHAPMAN, KS  
SVOBODA MD, LOIS V, WICHITA, KS  
SVOBODA MD, WILLIAM B, WICHITA, KS  
SWAIN, JAMES M, KANSAS CITY, KS  
SWAN MD, MAJOR MARTIN, AUBURN, CA  
SWANN MD, CLAIR L, RUSSELL, KS  
SWARTZ MD, MARSHA A, WICHITA, KS  
SWEAT, GREGORY T, SHAWNEE MISSION, KS  
SWEET MD, DONNA E, WICHITA, KS  
SWEET MD, ROBERT A, WICHITA, KS  
SWIFT MD, TIMOTHY J, WICHITA, KS  
SWOGGER JR MD, GLENN, TOPEKA, KS  
SWYKACZ, SUZANNE M, KANSAS CITY, KS  
SYNOVEC MD, MARK S, TOPEKA, KS  
SZYMKE MD, THOMAS E, WICHITA, KS

## T

TACKETT MD, ROBERT J, WAMEGO, KS  
TADEO, RIA E, KANSAS CITY, MO  
TADURAN MD, VIRGILIO, SATANTA, KS  
TAGUE MD, RICK R, TOPEKA, KS  
TAHERNIA MD, CYRUS, TOPEKA, KS  
TAKAHASHI MD, AYAME, CHICAGO, IL  
TAKAHASHI MD, TETSURO, TOPEKA, KS  
TALBERT MD, TIMOTHY C, LYONS, KS  
TAN MD, DONALD C-S, WICHITA, KS  
TAN MD, LOURDES R, HAYS, KS  
TANANUNKUL MD, URAIWAN, PARSONS, KS  
TANDOC JR MD, VALENTIN T, NEWTON, KS  
TANG MD, CHANTRA, PARSONS, KS  
TANG MD, SAROHD, PARSONS, KS  
TANKSLEY MD, JOHN A, HUTCHINSON, KS  
TARGOWNIK MD, KARL K, TOPEKA, KS  
TARNOWER MD, WILLIAM, TOPEKA, KS  
TARVER MD, STEPHEN D, WICHITA, KS  
TARVIN MD, RANDY J, ONAGA, KS  
TATPATI MD, DANIEL A, WICHITA, KS  
TATPATI MD, OLGA A, WICHITA, KS  
TAWADROS MD, HANAN K, WICHITA, KS  
TAWADROS MD, MARY L, TOPEKA, KS  
TAWIL MD, ELIAS ADIB, PITTSBURG, KS  
TAYIEM MD, A K, ATCHISON, KS  
TAYLOR MD, BARBARA D, MANHATTAN, KS  
TAYLOR MD, BRENDAN K, WICHITA, KS  
TAYLOR MD, CATHY M, CHANUTE, KS  
TAYLOR MD, ELMER W, SEDAN, KS  
TAYLOR MD, ELWYN J, HUTCHINSON, KS  
TAYLOR MD, RICHARD J, WICHITA, KS  
TAYLOR MD, STEVEN L, WICHITA, KS  
TAYLOR MD, THOMAS F, SHAWNEE MISSION, KS  
TAYLOR MD, THOMAS L, SHAWNEE MISSION, KS  
TAYLOR, BRADLEY J, LAWRENCE, KS  
TEARE MD, MAX E, GARDEN CITY, KS  
TEETER MD, SCOTT M, TOPEKA, KS  
TEJANO MD, NEONIL A, HALSTEAD, KS  
TEMPERO MD, STEPHEN J, TOPEKA, KS  
TENBY, MICHAEL C, SHAWNEE MISSION, KS  
TENNY MD, ROBERT T, SHAWNEE MISSION, KS  
TETZLAFF MD, ARCH O A, WEATHERBY LAKE, MO  
THAI MD, VINH Q, SANTA CLARITA, CA  
THAKOR MD, DENNIS S, WICHITA, KS  
THALBLUM MD, HARVEY, KANSAS CITY, MO  
THELEN MD, J CHRISTINE, WICHITA, KS  
THEROU MD, LEONA F, KANSAS CITY, KS  
THODE MD, JEFF L, KANSAS CITY, MO  
THOMAS MD, DARYL L, WICHITA, KS  
THOMAS MD, GREGORY MCQUEEN, MC PHERSON, KS  
THOMAS MD, JAMES H, KANSAS CITY, KS  
THOMAS MD, MARTY H, SHAWNEE MISSION, KS  
THOMAS MD, RYAN M, WICHITA, KS  
THOMAS MD, STANLEY M, SHAWNEE MISSION, KS  
THOMAS MD, THOMAS V, KANSAS CITY, KS  
THOMEN II MD, ROBERT K, CHANUTE, KS  
THOMPSON MD, CURT A, WICHITA, KS  
THOMPSON MD, DANIEL M, WICHITA, KS  
THOMPSON MD, DANNIE M, KANSAS CITY, KS  
THOMPSON MD, MICHAEL F, SHAWNEE MISSION, KS  
THOMPSON MD, ROBERT F, SHAWNEE MISSION, KS  
THOMS MD, NORMAN W, TOPEKA, KS  
THOMSEN MD, GARY, SHAWNEE MISSION, KS  
THORNTON III MD, FOXHALL P, OLATHE, KS  
THORNTON JR MD, FOXHALL P, CONCORDIA, KS  
THORPE MD, FRANCIS A, LAKE ZURICH, IL  
THORPE, GARY W, SHAWNEE MISSION, KS  
THURSTON MD, DAVID E, TOPEKA, KS

TICKLES MD, DEBRA F, KANSAS CITY, KS  
TIEMANN MD, WILLIAM H, MANHATTAN, KS  
TIETZE MD, DENNIS D, TOPEKA, KS  
TIGGES MD, THOMAS T, WICHITA, KS  
TILLER MD, GEORGE R, WICHITA, KS  
TILLMAN JR D O, DONALD K, HAYS, KS  
TILLOTSON MD, DON R, ULYSSES, KS  
TILSON MD, WAYNE R, LAWRENCE, KS  
TILTON MD, FRANK M, GREENVILLE, MS  
TINTEROW MD, MAURICE M, WICHITA, KS  
TIOJANCO MD, REYNALDO R, KANSAS CITY, KS  
TIPPIN JR MD, ERNEST E, ESTES PARK, CO  
TIPTON MD, KYLE M, WICHITA, KS  
TISDALE MD, TERRANCE C, HUTCHINSON, KS  
TOALSON MD, WILLIAM B, SHAWNEE MISSION, KS  
TOBIAS MD, ROGER R, LYONS, KS  
TOBIN MD, KENNETH E, CONCORDIA, KS  
TOBY MD, EDWARD B, KANSAS CITY, KS  
TOCKER MD, ALFRED M, WICHITA, KS  
TOLLER, KEVIN K, KANSAS CITY, KS  
TOMASKO MD, MARILYN A, SHAWNEE MISSION, KS  
TONN MD, GERHART R, WICHITA, KS  
TOOHEY MD, JOHN S, WICHITA, KS  
TOPLIFF MD, CONNIE L, LAWRENCE, KS  
TORLINE MD, RONALD L, KANSAS CITY, KS  
TOSH MD, FRED E, WICHITA, KS  
TOWLE MD, DANA R, SHAWNEE MISSION, KS  
TOZER MD, RICHARD C, TOPEKA, KS  
TRACY MD, TERRY A, TOPEKA, KS  
TRAN MD, THOMAS (TUONG) M, WICHITA, KS  
TRAN, STEVE M, KANSAS CITY, KS  
TRAVIS MD, JOHN W, TOPEKA, KS  
TREGER MD, NEWMAN V, TOPEKA, KS  
TREGO MD, A JASON, WICHITA, KS  
TREMPEY MD, GREGORY A, BALTIMORE, MD  
TRETBAR MD, HARVEY A, WICHITA, KS  
TRETBAR MD, LAWRENCE L, SHAWNEE MISSION, KS  
TREWEEKE MD, MICHAEL W, WICHITA, KS  
TRIOLO MD, PETER A, GARDEN CITY, KS  
TROTTER MD, ROGER COURTNEY, DODGE CITY, KS  
TROUTMAN D O, BETTY, WICHITA, KS  
TROY, TERESA J, KANSAS CITY, KS  
TRUEWORTHY MD, ROBERT C, KANSAS CITY, KS  
TRUJILLO MD, ANTERO A, WICHITA, KS  
TRUONG D O, HAI K, WICHITA, KS  
TRUONG D O, THANH N, WICHITA, KS  
TRYGG MD, KELLY A, WICHITA, KS  
TSAI MD, CHIA-HSUN, TOPEKA, KS  
TSCHOPP MD, CHARLES F, ANCHORAGE, AK  
TTOFI MD, CHRISTOPHER S, NEWINGTON, CT  
TUCKER D O, DAVID A, WICHITA, KS  
TUCKER MD, SHERIDAN G, SHAWNEE MISSION, KS  
TUCKER MD, VIRGINIA L, KANSAS CITY, KS  
TURNER MD, JOHN W, GARDEN CITY, KS  
TURNER MD, WADE A, WINFIELD, KS  
TURNER, LANE E, SHAWNEE MISSION, KS  
TURNER, SHELLEY A, KANSAS CITY, KS  
TUTUSKA MD, PETER J, TOPEKA, KS  
TWARDOWSKI MD, RADOMYSL M, WICHITA, KS  
TWEET MD, FREDRICK A, PITTSBURG, KS  
TWEITO MD, DAVID H, HUTCHINSON, KS  
TWIDALE MD, NICHOLAS, WICHITA, KS  
TYSON MD, MARY M, SHAWNEE MISSION, KS

## U

UBELAKER MD, ERNEST J, SOUTH HAVEN, KS  
UGARTE MD, FERNANDO, MARYSVILLE, KS  
UHLIG MD, PAUL N, WICHITA, KS  
UHR MD, NATHANIEL, TOPEKA, KS  
UMLAUF D O, EDWARD S, INDEPENDENCE, KS  
UNDERWOOD MD, CHARLES C, EMPORIA, KS  
UNDERWOOD MD, JOHN (JOHNSON IV), SPRINGFIELD, IL  
UNREIN MD, ROBERT J, GREAT BEND, KS  
UNRUH MD, GREGORY K, KANSAS CITY, KS  
UTLEY MD, JAMES HARMON, KANSAS CITY, MO  
UY MD, WILSON O, COFFEYVILLE, KS

## V

VACHAL MD, EVA, GARDEN CITY, KS  
VAL-MEJIAS MD, JESUS E, WICHITA, KS  
VALK MD, WILLIAM L, SHAWNEE MISSION, KS  
VAN GALLERA MD, ROBERT, WICHITA, KS  
VAN GEEM MD, THOMAS A, WICHITA, KS

VAN HOUDEN MD, CHARLES E, CHANUTE, KS  
VAN SICKLE MD, GREGORY J, TOPEKA, KS  
VANDEGARDE MD, LARRY D, TOPEKA, KS  
VANDER VELDE MD, STANLEY LEROY, EMPORIA, KS  
VANDERVEEN MD, DEBORAH K, WICHITA, KS  
VANNAMAN MD, DONALD D, SHAWNEE MISSION, KS  
VANVELDHUIZEN MD, PETER J, SHAWNEE MISSION, KS  
VARENHORST MD, MICHAEL P, WICHITA, KS  
VATS MD, TRIBHAWAN S, KANSAS CITY, KS  
VAUGHAN MD, D ANN, WICHITA, KS  
VEAL MD, KATHRYN, SHAWNEE MISSION, KS  
VEENIS MD, BLAKE C, WICHITA, KS  
VELAKATURI MD, VINOD N, SHAWNEE MISSION, KS  
VENUTI MD, SUSAN E, KANSAS CITY, KS  
VERMA MD, ASHA, PARSONS, KS  
VERNON MD, MARY C, LAWRENCE, KS  
VESALI MD, MEHRDAD, WICHITA, KS  
VIERRA MD, ANTHONY R, WICHITA, KS  
VIERRA MD, MICHAEL J, SAN DIEGO, CA  
VIERTHALER MD, CARL A, DODGE CITY, KS  
VIERTHALER MD, LYLE D, WICHITA, KS  
VIERTHALER MD, STEPHEN L, LAWRENCE, KS  
VIN ZANT MD, LARRY E, WICHITA, KS  
VINE MD, DONALD LEE, WICHITA, KS  
VINZANT MD, MARK N, DERBY, KS  
VINZANT MD, WHITNEY L, WICHITA, KS  
VODONICK MD, DAVID S, SHAWNEE MISSION, KS  
VOGEL MD, STANLEY J, TOPEKA, KS  
VOGT MD, VERNON W, NEWTON, KS  
VOLKMANN II MD, HARLEY W, MANHATTAN, KS  
VOORHEES MD, CARROLL D, LEAVENWORTH, KS  
VORAN MD, DAVID A, SHAWNEE MISSION, KS  
VORHEES MD, VICTOR J, YATES CENTER, KS  
VOSSLER, CHARLES, KANSAS CITY, KS  
VOTAPKA MD, WILLIAM L, STOCKTON, KS  
VOTH MD, ERIC A, TOPEKA, KS  
VOTH MD, HAROLD M, TOPEKA, KS  
VU, ANN L, WICHITA, KS  
VU, TRIEN B, WICHITA, KS

## W

WADE MD, EDWARD J, WICHITA, KS  
WADE MD, THEODORE E, MONTE MORELOS, MX  
WADUD MD, ABDUL, WICHITA, KS  
WAGENBLAST MD, HOWARD R, SALINA, KS  
WAGNER, JENNIFER K, KANSAS CITY, KS  
WAHBEH MD, ANTHONY D, KANSAS CITY, KS  
WAKEFIELD MD, KENNETH M, WICHITA, KS  
WALD MD, JEFFREY A, SHAWNEE MISSION, KS  
WALDORF JR MD, MELVIN H, GREENSBURG, KS  
WALDROP D O, RICHARD J, RILEY, KS  
WALIA MD, JAG S, TOPEKA, KS  
WALKER D O, MARSHALL D, WICHITA, KS  
WALKER MD, ANDY E, BELLEVILLE, KS  
WALKER MD, JACK D, SHAWNEE MISSION, KS  
WALKER MD, NELLIE G, LEE'S SUMMIT, MO  
WALKER MD, WILLIAM H, ESKRIDGE, KS  
WALKER MD, WILLIAM K, SEDAN, KS  
WALL MD, KEVIN K, MANHATTAN, KS  
WALL MD, TERRY J, TOPEKA, KS  
WALLACE D O, RICHARD B, WICHITA, KS  
WALLACE JR MD, WAYNE O, ATCHISON, KS  
WALLACE MD, BRETT E, TOPEKA, KS  
WALLACE MD, LEO F, TOPEKA, KS  
WALLING MD, ADRIAN E, WICHITA, KS  
WALLING MD, ANNE D, WICHITA, KS  
WALLS MD, WILLIAM J, TOPEKA, KS  
WALSH D O, LESLIE L, WICHITA, KS  
WALSH MD, THOMAS E, ONAGA, KS  
WALSH MD, THOMAS E, ONAGA, KS  
WALTERS MD, BYRON W, SUN CITY, AZ  
WALTON, PATRICIA L, GODDARD, KS  
WALTON, TERRI D, WICHITA, KS  
WALZ MD, ROYCE C, TOPEKA, KS  
WAMSLEY MD, CRAIG A, LAKIN, KS  
WANG MD, SIDNEY W, SHAWNEE MISSION, KS  
WANGER, MICHAEL P, SHAWNEE MISSION, KS  
WANLESS MD, KIRK M, TOPEKA, KS  
WARD MD, CYNTHIA L, DERBY, KS  
WARD MD, HOWARD N, TOPEKA, KS  
WARD MD, LARRY G, WICHITA, KS  
WARE MD, LUCILE M, TOPEKA, KS  
WARNER MD, RICHARD B, OLATHE, KS  
WARNOCK MD, JULIA K, TULSA, OK  
WARREN JR MD, JOHN W, WICHITA, KS  
WARREN MD, LINDA D, HANOVER, KS  
WARREN MD, LLOYD P, WICHITA, KS  
WARREN MD, ROGER D, HANOVER, KS

WARREN MD, WIRT A, WICHITA, KS  
 WARREN, RONDA L, KANSAS CITY, KS  
 WARRICK MD, DAVID A, TOPEKA, KS  
 WASHINGTON, CHARMETRA R, CHICAGO, IL  
 WASINGER, LORI D, SHAWNEE MISSION, KS  
 WASWICK MD, WILLIAM A, WICHITA, KS  
 WATERS MD, CLARENCE N, SALINA, KS  
 WATKINS MD, DEAN D, KANSAS CITY, KS  
 WATKINS MD, STEVEN C, TOPEKA, KS  
 WATSON MD, RICHARD L, MCPHERSON, KS  
 WATTS MD, HARRY E, HAYS, KS  
 WAUGH MD, CHARLES W, TOPEKA, KS  
 WAXMAN MD, DAVID, SHAWNEE MISSION, KS  
 WAXMAN MD, STEVE W, KANSAS CITY, KS  
 WAXMAN MD, STEVE W, KANSAS CITY, KS  
 WEATHERSTONE MD, KATHLEEN B, KANSAS CITY, KS  
 WEAVER MD, JACK D, WICHITA, KS  
 WEAVER MD, WALTER D, TOPEKA, KS  
 WEAVER, JOHN J, KANSAS CITY, KS  
 WEBB MD, DAVID E, WICHITA, KS  
 WEBB MD, JAMES R, SHAWNEE MISSION, KS  
 WEBBER, ELLEN S, KANSAS CITY, KS  
 WEBER II MD, RALPH H, TOPEKA, KS  
 WEBER JR MD, HUGO P, WICHITA, KS  
 WEBER MD, DARRELL J, TOPEKA, KS  
 WEBER MD, ROBERT W, SALINA, KS  
 WEBER MD, RUTH M, YATES CENTER, KS  
 WEBER MD, WALLACE N, HAYS, KS  
 WEBSTER MD, BOBBY W, SHAWNEE MISSION, KS  
 WEDDLE MD, DOUGLAS P, FORT SCOTT, KS  
 WEDEL MD, ALAN K, SALINA, KS  
 WEDEL MD, KENNETH D, MINNEAPOLIS, KS  
 WEDEL MD, KERMIT G, MINNEAPOLIS, KS  
 WEED MD, JOHN C, KANSAS CITY, KS  
 WEEKS MD, STACY S, TOPEKA, KS  
 WEIGAND MD, JOEL T, WELLINGTON, KS  
 WEIGEL MD, JOHN W, KANSAS CITY, KS  
 WEILERT MD, STEVEN V, FORT SCOTT, KS  
 WEINER MD, GARY B, ST PAUL, MN  
 WEIPPERT MD, EDWARD J, WICHITA, KS  
 WELCH MD, JAMES R, PARSONS, KS  
 WELCH MD, LAUREN A, GARDEN CITY, KS  
 WELCH MD, LAUREN K, WICHITA, KS  
 WELCH MD, MAURA S, GARDEN CITY, KS  
 WELCH MD, WADE B, TOPEKA, KS  
 WELL MD, MICHAEL A, LAWRENCE, KS  
 WELLS MD, BRUCE W, WINFIELD, KS  
 WELSH MD, NANCY J, TOPEKA, KS  
 WELTNER MD, ROGER P, BELOIT, KS  
 WENCEL MD, MARK L, WICHITA, KS  
 WENDT MD, RICHARD G, LAWRENCE, KS  
 WENGER MD, GREGG D, SABETHA, KS  
 WENINGER MD, JOHN H, WICHITA, KS  
 WERDER D O, STEVEN F, WICHITA, KS  
 WERNER MD, JAMES P, TOPEKA, KS  
 WERNER MD, WILLARD F, ATWOOD, KS  
 WERTH MD, DARRELL D, HAYS, KS  
 WERTZBERGER MD, JOHN, LAWRENCE, KS  
 WESBROOK MD, C WILSON, WICHITA, KS  
 WESCOE MD, W CLARKE, SPICER, MN  
 WESLEY MD, MICHAEL R, HUTCHINSON, KS  
 WEST MD, WILLIAM T, BRECKENRIDGE, CO  
 WETZEL MD, JAMES L, OLATHE, KS  
 WETZEL MD, MARK, MANHATTAN, KS  
 WHEELER MD, DWIGHT E, NEWTON, KS  
 WHEELER MD, NICKY RAY, WICHITA, KS  
 WHEELER MD, PINCKNEY R, WICHITA, KS  
 WHITAKER MD, JAMES A, WICHITA, KS  
 WHITAKER MD, MARK A, SHAWNEE MISSION, KS  
 WHITE D O, JOHN P, PITTSBURG, KS  
 WHITE II MD, BENJAMIN E, EL DORADO, KS  
 WHITE MD, CHARLES L, QUINCY, WA  
 WHITE MD, CHARLES M, WICHITA, KS  
 WHITE MD, DONALD C, COFFEYVILLE, KS  
 WHITE MD, FAGAN N, RUSSELL, KS

WHITE MD, NELSON P H, BURLINGTON, KS  
 WHITE MD, R BURNLEY, WINFIELD, KS  
 WHITEHEAD MD, RICHARD E, SHAWNEE MISSION, KS  
 WHITELY, RANDOLPH N, WICHITA, KS  
 WHITESIDE MD, WILLIAM H, WICHITA, KS  
 WHITFIELD MD, STEVEN S, SHAWNEE MISSION, KS  
 WHITLEY MD, DOUGLAS M, SHAWNEE MISSION, KS  
 WIBLE MD, KENNETH L, KANSAS CITY, KS  
 WICINA MD, GENON M, STILWELL, KS  
 WIEBE MD, ERIC M, WICHITA, KS  
 WIEGHARD MD, C MICHAEL, SHAWNEE MISSION, KS  
 WIENS MD, J WENDELL, NEWTON, KS  
 WIENS MD, LYNN A, GREAT BEND, KS  
 WIENS MD, TIMOTHY B, NEWTON, KS  
 WIGGINTON D O, GERALD D, SHAWNEE MISSION, KS  
 WIGGLESWORTH MD, ANNE, MANHATTAN, KS  
 WILCOX JR MD, HOWARD L, HAYS, KS  
 WILCOX MD, RONALD D, KANSAS CITY, KS  
 WILDER MD, LOWELL W, WICHITA, KS  
 WILDER, THOMAS W, KANSAS CITY, KS  
 WILDS MD, CHARLES E, BELLA VISTA, AR  
 WILEY MD, CLARENCE L, WICHITA, KS  
 WILEY MD, JOHN H, SHAWNEE MISSION, KS  
 WILEY MD, THOMAS M, TOPEKA, KS  
 WILKINSON MD, LARRY K, WICHITA, KS  
 WILKINSON MD, STEVEN B, KANSAS CITY, KS  
 WILLIAMS MD, CARL M, TOPEKA, KS  
 WILLIAMS MD, CHARLES L, WICHITA, KS  
 WILLIAMS MD, EVAN R, MESA, AZ  
 WILLIAMS MD, GARY G, SALINA, KS  
 WILLIAMS MD, GUY A, TOPEKA, KS  
 WILLIAMS MD, HOMER J, LAGUNA NIGUEL, CA  
 WILLIAMS MD, MICHAEL K, NEWTON, KS  
 WILLIAMS MD, THOMAS A, SHAWNEE MISSION, KS  
 WILLIAMSON, TIMOTHY L, KANSAS CITY, KS  
 WILSON MD, JAMES W, COFFEYVILLE, KS  
 WILSON MD, LORI J, SPRINGFIELD, MO  
 WILSON MD, MICHAEL A, WICHITA, KS  
 WILSON MD, ROBERT B, SHAWNEE MISSION, KS  
 WILSON MD, ROBERT L, WICHITA, KS  
 WILSON MD, SLOAN J, SHAWNEE MISSION, KS  
 WILTFOG MD, DAVID B, COLUMBIA, MO  
 WIMER, DOUG W, KANSAS CITY, KS  
 WIN MD, AYE M, DODGE CITY, KS  
 WINBLAD MD, J KENT, WINFIELD, KS  
 WINBLAD MD, JOHN M, WINFIELD, KS  
 WINDHOLZ MD, ARTHUR F, WICHITA, KS  
 WINGER MD, RAYMOND E, JUNCTION CITY, KS  
 WINKLER, LISA A, KANSAS CITY, KS  
 WINN MD, TERRIA L, WICHITA, KS  
 WISDOM MD, JAY K, WICHITA, KS  
 WISE MD, JOSEPH E, KANSAS CITY, KS  
 WISNER JR MD, HARRY J, WICHITA, KS  
 WITTMANN MD, ALBERT F, WICHITA, KS  
 WOHLER MD, JOHN P, SHAWNEE MISSION, KS  
 WOIWOOD MD, MARK D, WICHITA, KS  
 WOLF MD, KARL T, KANSAS CITY, KS  
 WOLF MD, PATRICK G, WICHITA, KS  
 WOLFE MD, BRIAN D, IOLA, KS  
 WOLFE MD, FREDERICK, WICHITA, KS  
 WOLFE, ANNE-MARIEKE, WICHITA, KS  
 WOLFF MD, FREDERICK P, KANSAS CITY, MO  
 WOLFRAM MD, DONALD P, SOUTH BEND, IN  
 WOLKOFF MD, A STARK, KANSAS CITY, MO  
 WOLLMANN MD, MARTIN, LAWRENCE, KS  
 WOOD JR MD, ROBERT A, SHAWNEE MISSION, KS  
 WOOD MD, EDWARD R, TOPEKA, KS  
 WOOD MD, FRED M, SHAWNEE MISSION, KS  
 WOOD MD, GARY B, WICHITA, KS  
 WOOD MD, ROBERT D, WICHITA, KS  
 WOODALL MD, DENNIS C, SALINA, KS  
 WOODHOUSE MD, CHARLES L, WICHITA, KS  
 WOODRING MD, CATHY S, WICHITA, KS  
 WOODS MD, DENNIS D, HUTCHINSON, KS  
 WOODS MD, GREGORY A, HAYS, KS  
 WOODS MD, MICHAEL S, WICHITA, KS  
 WOODS MD, S DWIGHT, OLATHE, KS

WOOLLEY MD, DOUGLAS C, WICHITA, KS  
 WORTMAN MD, JACK A, HUTCHINSON, KS  
 WRAY JR MD, REGINALD P, WICHITA, KS  
 WRAY MD, ALEXANDER J, WICHITA, KS  
 WRIGHT MD, GEORGE W, TOPEKA, KS  
 WRIGHT MD, KEITH A, MANHATTAN, KS  
 WRIGHT MD, KENDALL M, EMPORIA, KS  
 WRIGHT MD, MICHAEL J, HAYS, KS  
 WRIGHT MD, STANLEY E, WICHITA, KS  
 WU MD, JIN-TZE, WICHITA, KS  
 WURSTER MD, G. RICHARD, SHAWNEE MISSION, KS  
 WYATT-HARRIS MD, PATRICIA G, WICHITA, KS  
 WYNNE MD, ALAN G, TOPEKA, KS

## Y

YAGHMOUR MD, TALAAT E, PITTSBURG, KS  
 YALAMANCHILI MD, RAVI, SHAWNEE MISSION, KS  
 YANG MD, ALEXANDER Q, KANSAS CITY, KS  
 YEH MD, ROBERT M, TOPEKA, KS  
 YEOMANS MD, RONALD N, SHAWNEE MISSION, KS  
 YOACHIM MD, ROBERT W, ARKANSAS CITY, KS  
 YOAKUM-PYLE MD, MARGARET A, KANSAS CITY, KS  
 YODER MD, EMERSON D, DENTON, KS  
 YODER MD, VERNON E, HESSTON, KS  
 YOESEL MD, MICHAEL A, SHAWNEE MISSION, KS  
 YOHE MD, RUTH M, SHAWNEE MISSION, KS  
 YOON MD, CHANG SUP, WICHITA, KS  
 YORKE JR MD, CRAIG H, TOPEKA, KS  
 YOST JR MD, JOHN G, KANSAS CITY, MO  
 YOUNG MD, CHARLES H, ATCHISON, KS  
 YOUNG MD, DOUGLAS L, WICHITA, KS  
 YOUNG MD, JOHN W, SHAWNEE MISSION, KS  
 YOUNG MD, PAUL E, TOPEKA, KS  
 YOUNG MD, ROBERT C, WICHITA, KS  
 YOUNG MD, THEODORE E, TOPEKA, KS  
 YOUNG, D ALLEN, KANSAS CITY, KS  
 YOUNG, EDMOND M, OLATHE, KS  
 YOUNGBERG MD, DEAN I, WICHITA, KS  
 YOUNGER MD, STACY D, SHAWNEE MISSION, KS  
 YOUNGLOVE MD, HAL, SHAWNEE MISSION, KS  
 YOUNGMAN DO, DARRELL J, WICHITA, KS  
 YOXALL MD, KELLY E, KANSAS CITY, MO  
 YU MD, EDWIN T, KANSAS CITY, KS  
 YULICH MD, JOHN O, SABETHA, KS  
 YUT JR MD, JOSEPH P, SHAWNEE MISSION, KS

## Z

ZACHARIAS MD, DAVID LLOYD, TOPEKA, KS  
 ZAINALI MD, ASSADOLLAH, LIBERAL, KS  
 ZAMIEROWSKI MD, DAVID S, SHAWNEE MISSION, KS  
 ZARNOW MD, HILARY, WICHITA, KS  
 ZARR MD, JAMES S, KANSAS CITY, MO  
 ZATZKIN MD, JAY B, WICHITA, KS  
 ZAUCHE MD, JAMES T, GARDEN CITY, KS  
 ZAYLOR D O, CHARLES L, NEWTON, KS  
 ZEILER MD, STEVEN B, OLATHE, KS  
 ZELLER MD, MYRON J, GARDEN CITY, KS  
 ZEPICK MD, LYLE F, WICHITA, KS  
 ZERBE MD, KATHRYN, TOPEKA, KS  
 ZIELKE MD, STEVEN L, WICHITA, KS  
 ZIMMERMAN MD, BRUCE E, OLATHE, KS  
 ZIMMERMAN MD, KENNETH D, WICHITA, KS  
 ZIMMERMAN MD, WILLIAM H, TOPEKA, KS  
 ZINN MD, THOMAS W, KANSAS CITY, KS  
 ZONGKER MD, PHILIP E, WICHITA, KS  
 ZUERCHER MD, PAUL S, WINSTON SALEM, NC  
 ZUNIGA MD, HENRY M, NEW ORLEANS, LA  
 ZWIACHER MD, KAYE F, WICHITA, KS



## Physician Distribution by Cities

### EXPLANATION OF CODES USED IN THIS SECTION

Line 1:	<u>Doe, John R.,</u>	<u>1234 Oak St.,</u>	<u>67052</u>
	(Name)	(Street Address)	(Zip Code)
Line 2:	<u>(654-2222)</u>	<u>123456789</u>	
	(Telephone Number)	(I.D. Number)	
Line 3:	<u>33</u>	<u>M</u>	<u>1902</u>
	(Year of Birth)	(Sex)	(Medical School)
			<u>58</u>
			(Year of Licensure)
			<u>FP</u>
			(Specialty)

Telephone area code follows city name. \* Probationary Members

**ABILENE — 913**  
*(Dickinson County Medical Society)*

BERKLEY MD, DON H, 1111 N BRADY, 67410-1804  
263-4131 1902610061  
35 M 1902 62 FP

BIGGS MD, J DENNIS, 1405 N CEDAR, 67410-1546  
263-7190 1902740097  
48 M 1902 74 FP

CHAFFEE MD, DEAN C, RR 1, 67410-9801  
0 1902440298  
11 M 1902 44 00

COLEMAN MD, GARY, 1405 N CEDAR, 67410-1546  
263-7190 1902720223  
46 M 1902 73 FP

MOHLER MD, JACK M, 420 NE TENTH, 67410-2136  
263-1419 1902610592  
32 M 190 62 PM

NARCISO MD, VICENTE D, 515 NE 10TH ST, 67410-2153  
263-2253 74810680052  
45 M 74810 76 GS

RORABAUGH MD, DONALD C, 1111 BRADY, 67410-1804  
263-4131 1902580782  
33 M 1902 59 FP

SCHWARTING MD, J STEVEN, 1405 N CEDAR, 67410-1546  
263-7190 3401720307  
46 M 3401 73 FP

SHEERN MD, MARK DOUGLAS, 1111 N BRADY, 67410-1804  
263-4131 1902761221  
51 M 1902 77 FP

SONGER MD, HERBERT L, 1007 SPRUCEWAY, 67410-2033  
0 1902380546  
12 M 1902 38 00

ALTAMONT — 316  
(Labette County Medical Society)

JACKSON MD, VICTOR L, BOX 467, 67330-0467  
2105500257  
20 M 2105 54 00

ANDALE — 316  
(Sedgwick County Medical Society)

STECH MD, JOSEPH M, PO BOX 38, 67001-0038  
796-0601 3006560660  
27 M 3006 57 FP

ANDOVER — 316  
(Sedgwick County Medical Society)

KORTJE MD, DAVID K, 524 N ANDOVER RD, 67002-0000  
733-1331 0  
63 M 3005 90 FP

LEMONS MD, STEPHEN F, 524 N ANDOVER RD, PO BOX 496, 67002-0496  
733-1331 1902821020  
54 M 1902 83 FP

ANTHONY — 316  
(Ninnescah Medical Society)

ANTRIM MD, PHILIP J, RR 1 BOX 84 67003-9747  
0 1902420033  
15 M 1902 42 00

**ARKANSAS CITY — 316**  
*(Cowley County Medical Society)*

ALVAREZ MD, NORBERTO, PO BOX 929, 67005-0929  
424850 27501590547  
29 M 27501 73 FP

AUCAR MD, ALFREDO, BOX 1105, 67005-1105  
442-1710 27501531303  
23 M 27501 70 OTO

DE ARMOND MD, LYNDA B, 510 W RADIO LN, 67005-4098  
442-2100 0  
63 F 4815 92 FP

HILL MD, JAMES E, 1019 N 2ND ST, 67005-1513  
0 1902340277  
9 M 1902 34 00

MARVEL MD, JAMES E, PO BOX 873, 67005-0873  
441-0222 3901680573  
43 M 3901 72 ORS

OLD MD, JERRY L, 510 W RADIO LN, 67005-4011  
442-2100 1902741701  
49 M 1902 75 FP

ROSS MD, DAVID K, PO BOX 1148, 67005-1148  
442-2100 1902740968  
48 M 1902 75 FP

SCHMEIDLER MD, DAVID A, PO BOX 1148, 67005-1148  
442-2100 1902791589  
54 M 1902 82 FP

SCHOELING MD, RICK D, 510 W RADIO LN, 67005-4011  
442-2100 1902861498  
59 M 1902 89 FP

SHAHZADA MD, KAMRAN, PO BOX 929, 67005-0929

442-1444	0			
53	M	30-811	92	IM

SINGH MD, GIRVAR, PO BOX 675, 67005-0675

442-4300	49555640021			
40	M	49555	78	OPH

SMITH MD, BRUCE G, 210 S 2ND ST, 67005-2863

0	1902441421			
20	M	190-244	OO	

SMITH MD, NEWTON C, PO BOX 1148, 67005-1148

442-2100	3901450594			
21	M	3901	51	FP

YOACHIM MD, ROBERT W, PO BOX 1148, 67005-1148

442-2100	3005781417			
52	M	3005	80	FP

### ATCHISON — 913

*(Atchison County Medical Society)*

BURKE MD, JOSEPH V, 1400 N 2ND ST, 66002-1203

367-5496	3006660125			
35	M	3006	71	GS

EPLER MD, JOHN R, 1225 N 2ND ST, 66002-1474

367-0880	1902780595			
53	M	1902	82	FP

FAST MD, W SPENCER, 1301 N 2ND ST, 66002-1297

367-7417	3006390268			
11	M	3006	40	FP

GORACKE MD, DOUGLAS S, 1301 N 2ND ST, 66002-1297

367-2131	1902850631			
58	M	1902	85	AN

HART MD, LAWRENCE E, 1412 N 2ND ST, 66002-1203

367-5054	1902640351			
32	M	1902	65	FP

JONES MD, MICHAEL P, 1225 N 2ND ST, 66002-1474

367-0880	1902830991			
55	M	1902	85	FP

RIDER MD, JAMES W, 1225 N 2ND ST, 66002-1474

367-0861	2803730744			
47	M	2803	76	FP

SHRIWISE MD, TOM L, 1301 N 2ND ST, 66002-1297

367-3646	1902810711			
54	M	1902	0	ORS

TAYIEM MD, A K, 1225 N 2ND ST, 66002-1474

367-1114	33002680012			
43	M	33002	72	GS

WALLACE JR MD, WAYNE O, 1301 N 3RD ST, 66002-1200

367-7300	2803650732			
36	M	2803	67	FP

YOUNG MD, CHARLES H, 1301 N 3RD ST, 66002-1200

367-4053	1902530980			
23	M	1902	53	FP

### ATTICA — 316

*(Ninnescah Medical Society)*

STONE MD, GRANT C, 500 N HARPER, 67009-0000

254-7219	5605350480			
8	M	5605	69	FP

### ATWOOD — 913

*(Northwest Kansas Medical Society)*

WERNER MD, WILLARD F, PO BOX 5, 67730-0005

626-3241	1902520755			
24	M	1902	52	FP

### AUGUSTA — 316

*(Butler-Greenwood County Medical Society)*

ANDERSON MD, DALE W, 120 W JOSEPHINE, 67010-2037

775-5432	1902550018			
30	M	1902	55	FP

BARBER MD, JAMES L, 120 W JOSEPHINE, 67010-2037

775-5432	1902570035			
31	M	1902	57	FP

### BAXTER SPRINGS — 316

*(Crawford-Cherokee County Medical Society)*

ALQUIST MD, VERYL D, 2040 FAIRVIEW, 66713-0000

0	1902420017			
17	M	1902	42	OO

### BELLE PLAINE — 316

*(Sedgwick County Medical Society)*

MEEKER II MD, BRUCE P, RR 3 BOX 68, 67013-0000

0	1902580626			
30	M	1902	59	OO

### BELLEVILLE — 913

*(Republic County Medical Society)*

DOUBEK MD, HERBERT D, 2408 FAIRWAY CT, 66935-2728

0	1902560323			
28	M	1902	56	OO

HOLT MD, ROBERT E, PO BOX 250, 66935-0250

527-2237	702760518			
59	M	1902	77	FP

SCOTT MD, DUANE, 2337 G ST, 66935-2453

527-2217	1902600759			
34	M	1902	61	FP

WALKER MD, ANDY E, 2337 G ST, 66935-2453

527-2217	1902871795			
61	M	1902	88	FP

### BELOIT — 913

*(Mitchell County Medical Society)*

CONCANNON MD, CRAIG A, 310 W 8TH, 67420-1603

738-2246	1902840415			
58	M	1902	0	IM

DOBRATZ MD, ROBERT A, 700 N PINE, 67420-2532

0	1902520224			
24	M	1902	52	OO

DRAKE MD, DOUGLAS J, 112 W MAIN PO BOX 605, 67420-0605

738-3571	1902710317			
43	M	1902	72	FP

FUGATE MD, CARL L, 310 W 8TH, 67420-1603

738-2246	1902840601			
57	M	1902	0	FP

KIMPLE MD, KRIS G, 310 W 8TH ST, 67420-1603

738-2246	1902890927			
53	M	1902	0	FP

KLEND JR MD, MARTIN B, 310 W 8TH, 67420-1603

738-2246	1643630351			
38	M	1643	66	GS

WELTMER MD, ROGER P, PO BOX 571, 67420-0571

0	1902441588			
18	M	1902	44	OO



**BLUE RAPIDS — 913**  
(Northeast Kansas Medical Society)

BUCK JR MD, WILLIAM D, 607 LINCOLN, 66411-1419  
226-7202 1902600121  
59 M 1902 89 FP

LAWLESS MD, HAROLD L, 607 LINCOLN, 66411-1419  
0 702540381  
29 M 702 58 OO

**BONNER SPRINGS — 913**  
(Wyandotte County Medical Society)

JOHNSON MD, CLIFFORD D, 120 N NETTLETON, 66012-1496  
422-2020 1902850879  
56 M 1902 92 FP

MAY MD, KENNETH L, 525 MACGRANTWOOD DR, 66012-1923  
0 1902510482  
20 M 1902 41 OO

**BUCKLIN — 316**  
(Iroquois County Medical Society)

LUNA MD, ANTHONY D, 203 N MAIN, 67834-0000  
826-3266 1902821071  
54 M 1902 83 FP

**BUFFALO — 316**  
(Southeast Kansas Medical Society)

BEAL MD, RAYMOND J, RR #1 BOX 21, 66717-9729  
0 1902380031  
12 M 1902 38 OO

**BURDEN — 316**  
(Cowley County Medical Society)

KAUFMAN MD, LELAND R, RR 1 BOX 153B, 67019-0000  
0 1902610428  
33 M 1902 61 OO

**BURLINGTON — 316**  
(Flint Hills Medical Society)

WHITE MD, NELSON P H, 824 N 4TH ST, 66839-2601  
364-5395 3901630835  
34 M 3901 90 FP

**CANEY — 316**  
(Southeast Kansas Medical Society)

MOORE MD, ROBERT F, PO BOX 325, 67333-0325  
879-2135 1902560765  
28 M 1902 56 FP

**CARBONDALE — 913**  
(Shawnee County Medical Society)

HAVERKAMP MD, KENT D, 211 E MAIN, 66414-9635  
836-7111 0  
63 M 1902 0 IM

HORNBAKER MD, STANLEY D, 211 E MAIN, 66414-9635  
836-7111 1902820805  
56 M 1902 0 IM

**CHANUTE — 316**  
(Southeast Kansas Medical Society)

ABBUEHL MD, DON R, 932 WINDSOR, 66720-2547  
0 1902440018  
18 M 1902 44 OO

ASHLEY MD, SAMUEL G, 505 S PLUMMER, 66720-1950  
0 1902430021  
16 M 1902 43 OO

BURKMAN MD, REUBEN J, 1501 W 7TH, 66720-2551  
431-9310 1902540101  
28 M 1902 54 FP

GEHRT MD, EARL B, 505 S PLUMMER, 66720-1950  
431-2500 1902620261  
32 M 1902 63 FP

KIHM MD, ALBERT A, 505 S PLUMMER, 66720-1950  
431-2500 1902550646  
27 M 1902 55 FP

MABEN MD, PAMELA S, 505 S PLUMMER, 66720-1950  
431-2500 1902791210  
54 F 1902 80 IM

MC FARLAND MD, GRETA S, 505 S PLUMMER, 66720-1950  
431-2500 1902791295  
54 F 1902 81 PD

PARHAM MD, VERDON W, 505 S PLUMMER, 66720-1950  
431-2500 1902731411  
47 M 1902 75 FP

PEASTER MD, MICHAEL L, 505 S PLUMMER, 66720-0000  
431-2500 0  
56 M 5606 0 U

TAYLOR MD, CATHY M, 1409 W 7TH, 66720-2550  
431-0340 1902831289  
57 F 1902 88 OBG

THOMEN II MD, ROBERT K, 505 S PLUMMER, 66720-1950  
431-2500 1902841802  
59 M 1902 86 FP

VAN HOUDEN MD, CHARLES E, 505 S PLUMMER, 66720-1950  
431-2500 1902761434  
52 M 1902 77 GS

**CHAPMAN — 913**  
(Dickinson County Medical Society)

SVOBODA MD, CHARLES R, PO BOX 218, 67431-0218  
0 1902460663  
18 M 1902 46 OO

**CHETOPA — 316**  
(Labette County Medical Society)

PEFFLY MD, ELMER D, PO BOX 266, 67336-0266  
236-7188 3901530601  
22 M 3901 56 FP

**CIMARRON — 316**  
(Ford County Medical Society)

HOSTETLER MD, ROBERT W, PO BOX 209, 67835-0209  
855-7717 1902870781  
55 M 1902 88 FP

**CLAY CENTER — 913**  
(Clay County Medical Society)

BROWNING MD, JIMMIE L, PO BOX 520, 67432-0520  
632-2181 1902780285  
50 M 1902 79 FP

BUTT MD, MUHAMMED, 2201 7TH, 67432-1585  
 632-2191 70401690156  
 46 M 70401 0 GS

ERICKSON MD, KENT E, PO BOX 520, 67432-0520  
 632-2181 1902832145  
 56 M 1902 0 FP

HATESOHL MD, STANLEY M, PO BOX 520, 67432-0520  
 632-2181 1902840750  
 57 M 1902 87 FP

NELSON MD, MARIAN K, PO BOX 520, 67432-0520  
 632-2181 1902881120  
 59 F 1902 0 FP

PENNER MD, TIMOTHY M, PO BOX 520, 67432-0520  
 632-2181 1902861331  
 59 M 1902 0 FP

### CLYDE — 913 (Cloud County Medical Society)

COULTER D O, THAYNE A, 306 N HIGH, 66938-9468  
 0 2878370034  
 12 M 2878 37 OO

### COFFEYVILLE — 316 (Southeast Kansas Medical Society)

BLOCK MD, JEROME E, PO BOX 464, 67337-0464  
 251-2400 3305640033  
 38 M 3305 0 IM

CAMPBELL MD, WILLIAM H, 1411 W 4TH STE D, 67337-3300  
 251-3235 1902650098  
 39 M 1902 66 OPH

CHILLAL MD, PANDURANG P, 801 W 8TH ST, 67337-4109  
 251-7505 49535740061  
 49 M 49535 87 IM

DICKINSON MD, CHARLES R, 608 SPRUCE, 67337-4928  
 0 1606450300  
 20 M 1606 47 OO

HAN MD, CHAN S, 908 SIGGINS, 67337-2921  
 251-1560 58306610048  
 35 M 58306 74 PD

HOWERTER JR MD, BERNARD E, PO BOX 659, 67337-0659  
 251-4790 1803680490  
 43 M 1803 73 U

MILLER D O, STEPHEN A, PO BOX 489, 67337-0489  
 251-0777 2878760509  
 47 M 2878 87 OBG

READ MD, WILLIAM T, 411 W 9TH ST, 67337-5015  
 251-1120 2802400678  
 16 M 2802 46 FP

UY MD, WILSON O, 101 TYLER BLVD, 67337-2424  
 251-1200 74801670192  
 42 M 74801 73 PATH

WHITE MD, DONALD C, PO BOX 1449, 67337-0937  
 251-1200 3515650694  
 35 M 3515 72 R

WILSON MD, JAMES W, PO BOX 469, 67337-0469  
 251-5210 3901580790  
 26 M 3901 69 GP

### COLBY — 913 (Northwest Kansas Medical Society)

SMITH JR MD, FLOYD L, 880 SUNSET, 67701-2945  
 0 1902441430  
 20 M 1902 44 OO

### COLDWATER — 316 (Iroquois County Medical Society)

GOERING MD, DONALD D, BOX 748, 67029-0748  
 582-2136 1902560421  
 31 M 1902 56 FP

### COLUMBUS — 316 (Crawford-Cherokee County Medical Society)

MOGHE MD, CHANDRAKANT B, 301 N KANSAS ST, 66725-1223  
 429-3636 0  
 63 M 49545 0 FP

PASIMIO MD, ROGER S, PO BOX 79, 66725-0079  
 429-1977 74801623089  
 38 M 74801 0 GS

### CONCORDIA — 913 (Cloud County Medical Society)

ANDERSON MD, PATRICIA W, 910 W 11TH ST, 66901-3911  
 243-3111 3006861066  
 59 F 3006 0 IM

FOWLER MD, WAYNE L, 1010 3RD PO BOX 589, 66901-0589  
 243-1560 1720470299  
 23 M 1720 53 IM

FREEBORN JR MD, WARREN S, RR 3 BOX 307, 66901-9105  
 0 1720510312  
 26 M 1720 60 OO

MYERS MD, DANIEL L, 910 W 11TH, 66901-3911  
 243-4272 1902821356  
 56 M 1902 88 GS

RAY MD, DAVID J, 910 W 11TH, 66901-3911  
 243-2511 2803610471  
 36 M 2803 91 U

RUZICKA MD, LAWRENCE J, 1115 HILLSIDE, 66901-4021  
 0 3005400588  
 13 M 3005 46 OO

STRYKER JR MD, HENRY B, 1110 W 11TH, 66901-0000  
 0 3501440999  
 19 M 3501 52 OO

THORNTON JR MD, FOXHALL P, 723 W 7TH, 66901-2711  
 243-1560 5101510656  
 25 M 5101 55 IM

TOBIN MD, KENNETH E, 135 W 11TH PO BOX 637, 66901-0637  
 243-5005 1902851794  
 56 M 1902 91 PD

### COTTONWOOD FALLS — 316 (Flint Hills Medical Society)

SHERARD MD, JOHN L, PO BOX 585, 66845-0585  
 272-6131 1902861561  
 59 M 1902 91 FP

### COUNCIL GROVE — 316 (Flint Hills Medical Society)

BLACKBURN MD, ROBERT W, RR 2 BOX 34A, 66846-9802  
 0 1902490040  
 22 M 1902 49 OO

BYRAM MD, MELANIE S, 604 N WASHINGTON ST, 66846-1467  
 767-5126 4804870763  
 60 F 4804 0 FP

FRESE MD, DANIEL R, 604 N WASHINGTON PO BOX A, 66846-0600  
 767-5126 1902780617  
 53 M 1902 78 FP

HORNUNG MD, JOEL E, PO BOX A, 66846-0600  
 767-5126 1902850801  
 59 M 1902 86 FP



SIEGLE MD, LORA A, PO BOX A C/O FMLY HLTH CNTR, 66846-0600  
 767-5126 1902841632  
 56 F 1902 0 FP

**CUNNINGHAM — 913**  
*(Wyandotte County Medical Society)*

ALLBRITTEN JR MD, FRANK F, PO BOX 177, 67035-0177  
 0 4101380021  
 14 M 4101 54 OO

**DENTON — 913**  
*(Northeast Kansas Medical Society)*

YODER MD, EMERSON D, PO BOX 128, 66017-0128  
 0 1902490791  
 14 M 1902 49 OO

**DERBY — 316**  
*(Sedgwick County Medical Society)*

CHAPMAN MD, RANDELL B, 1410 N WOODLAWN BLVD, 67037-2922  
 788-3741 3901830231  
 55 M 3901 91 FP

LIND II MD, EDWARD J, 1101 N ROCK RD, 67037-3735  
 788-6963 1902781036  
 53 M 1902 79 FP

NIEDEREE MD, DAVID W, 1101 N ROCK RD, 67037-3735  
 788-6963 3006820785  
 56 M 3006 84 FP

VINZANT MD, MARK N, 1410 N WOODLAWN BLVD, 67037-2922  
 788-3741 64914751614  
 45 M 64914 77 FP

WARD MD, CYNTHIA L, 1101 N ROCK, 67037-3735  
 683-4334 1902851875  
 58 F 1902 0 FP

**DODGE CITY — 316**  
*(Ford County Medical Society)*

AMAWI MD, MOHAMMAD S, 2020 CENTRAL, 67801-6411  
 227-1371 87501710073  
 46 M 87501 76 GS

AVILA MD, OSCAR, 2020 CENTRAL, 67801-6411  
 227-1371 17603690061  
 41 M 17601 75 IM

AYUTHIA MD, ISSARA I, 2004 FREDERICK DR, 67801-2915  
 0 89101670474  
 40 M 89101 78 PATH

BRIAN MD, DAVID A, PO BOX 1000, 67801-6422  
 227-1148 4102640191  
 39 M 4102 89 OTO

CHOTIMONGKOL MD, ANUPONG, 2020 CENTRAL, 67801-6411  
 227-1371 89102690193  
 43 M 89102 76 OBG

CONANT MD, MERRILL, 120 ROSS, 67801-2131  
 227-6550 1902830452  
 56 M 1902 0 FP

CONARD MD, CLAIR C, 2020 CENTRAL, 67801-6411  
 227-1371 1902550247  
 27 M 1902 55 IM

GARCIA MD, GUILLERMO O, 1206 FRONTVIEW, 67801-2039  
 225-7710 23101680266  
 43 M 23101 77 ORS

GREENBERG MD, GEORGE E, 1904 BURR PKWY, 67801-2324  
 225-1033 401680314  
 42 M 401 72 R

HARDING MD, PHYLLIS M, 2020 CENTRAL, 67801-6411  
 227-1371 0  
 59 F 3841 0 PD

JOHNSON MD, HOWELL D, 2020 CENTRAL, 67801-6411  
 227-1371 1902710546  
 45 M 1902 72 IM

KENOYER MD, M RAY, 1206 FRONTVIEW STE 201, 67801-2039  
 227-6900 0  
 43 M 1902 90 GS

KNOLL MD, BRUCE F, 2020 CENTRAL, 67801-6411  
 227-1371 2501620800  
 33 M 2501 92 U

KYI MD, WIN M, PO BOX 1517, 67801-1517  
 227-3141 20901730165  
 49 M 20901 0 GS

MARPLES MD, DOUGLAS, 2020 CENTRAL, 67801-6411  
 227-1371 1902800731  
 54 M 1902 0 IM

MCELHINNEY MD, CHARLES F, 2020 CENTRAL, 67801-6411  
 227-1371 1902620547  
 36 M 1902 63 GS

NELSON MD, CHARLES G, 2020 CENTRAL, 67801-6411  
 227-1371 1902861285  
 56 M 1902 89 IM

NIXON MD, JAMES E, PO BOX 1318, 67801-1318  
 225-1033 4812720738  
 40 M 4812 79 DR

OHMAN MD, RICHARD J, 1810 1/2 FAIRWAY DR, 67801-2903  
 0 2407410664  
 15 M 2407 50 OO

ROONEY D O, MICHAEL N, 2020 CENTRAL AVE, 67801-6411  
 227-1371 0  
 58 M 2878 86 GP

SCHWARTZ MD, EUGENE W, 2100 CAROUSEL, 67801-0000  
 0 1902500649  
 24 M 1902 50 OO

TROTTER MD, ROGER COURTNEY, 120 ROSS BLVD, 67801-2131  
 225-6120 1902741824  
 47 M 1902 76 FP

VIERTHALER MD, CARL A, 2020 CENTRAL, 67801-6411  
 227-1371 1902781885  
 53 M 1902 78 IM

WIN MD, AYE M, PO BOX 1517, 67801-1517  
 227-3141 20901750115  
 50 F 20901 0 IM

**EL DORADO — 316**  
*(Butler-Greenwood County Medical Society)*

AHMAD MD, ABDU Q, 123 N ATCHISON ST STE 302, 67042-1738  
 321-7402 70403580188  
 32 M 16002 84 OTO

COLEY D O, MICHAEL E, 620 W CENTRAL, 67042-0000  
 321-9000 0  
 51 M 1875 0 OTO

COOPER MD, CATHY N, 119 N JONES ST, 67042-1469  
 321-2010 1902860360  
 62 F 1902 0 FP

HAFFNER MD, WILLIAM N, 123 N ATCHISON ST, 67042-1738  
 321-5630 1902610312  
 35 M 1902 62 GS

KUHNS MD, HENRY R, 123 N ATCHISON ST, 67042-1738  
 321-2100 1902850992  
 59 M 1902 0 IM

LEE MD, YONG U, 123 N ATCHISON ST, 67042-1738  
 321-0010 58310600081  
 35 M 58310 77 GS

NIGHTENGALE MD, DIANE D, 119 JONES ST, 67042-1469  
 321-2010 1902860441  
 60 F 1902 0 FP

OLSEN MD, PHILLIP S, 123 N ATCHISON ST, 67042-1738  
 321-2100 1902730849  
 46 M 1902 73 IM

PROCTOR MD, ROBERT W, 119 JONES ST, 67042-1499  
 321-2010 1902630682  
 38 M 1902 0 FP

REDDY MD, SUGUNA V, 123 N ATCHISON ST, 67042-1738  
 321-7550 49562720277  
 47 F 49562 79 PD

REDDY MD, VENUMBAKA C, 123 N ATCHISON #103, 67042-1738  
 321-3300 49558710054  
 46 M 49511 79 IM

RODRIGUEZ MD, WILMAR C, 123 N ATCHISON ST STE 301, 67042-1738  
 321-7683 0  
 45 M 84710 0 U

SHIELDS JR MD, JAMES M, 1325 W 3RD, 67042-1519  
 0 4802421376  
 18 M 4802 46 OO

SIWEK MD, CHRISTOPHER W, 123 N ATCHISON STE 303, 67042-1738  
 321-5211 75911710013  
 48 M 75911 78 ORS

WHITE II MD, BENJAMIN E, 301 S DENVER, 67042-0000  
 321-2010 1902540993  
 27 M 1902 54 FP

## ELKHART — 316

(Southwest Kansas Medical Society)

IWAY MD, BELINO D, PO BOX 878, 67950-0878  
 697-2175 74811660586  
 42 M 74811 78 IM

IWAY MD, OLIVIA N, PO BOX 878, 67950-0878  
 697-2175 74811680412  
 43 F 74811 80 P

PERIDO MD, DOMINADOR T, BOX 997, 67950-0997  
 697-2155 74801680384  
 44 M 74801 75 GS

SOMERA MD, JOSE D, PO BOX 1436, 67950-1436  
 697-2149 74807540291  
 27 M 74807 0 GYN

## ELLINWOOD — 316

(Barton County Medical Society)

LAW MD, FINDLEY, 402 N MAIN, 67526-1615  
 0 1902510431  
 22 M 1902 51 OO

SHIVELY MD, ROBERT M, 611 N MAIN, 67526-1440  
 564-2318 1902862061  
 56 M 1902 89 FP

## EMPORIA — 316

(Flint Hills Medical Society)

AMEND MD, DOUGLAS J, 1127 CHESTNUT ST #300, 66801-2523  
 343-6565 1902760039  
 46 M 1902 79 OBG

BARNETT MD, JAMES A, 919 W 12TH, 66801-5585  
 342-2521 1902790124  
 54 M 1902 82 IM

BERNARD MD, JOHN H, 1024 W 12TH, 66801-5553  
 343-6864 1902850127  
 58 M 1902 88 FP

BOSILJEVAC JR MD, JOSEPH E, 2522 W 15TH, 66801-6102  
 343-7043 1902751650  
 51 M 1902 81 TS

BRADLEY MD, H RUSSELL, 1601 STATE, 66801-5300  
 343-2900 1902610096  
 35 M 1902 62 FP

BROCKHOUSE MD, JOHN P, 1601 STATE, 66801-5300  
 343-2900 1902570060  
 31 M 1902 57 IM

BURGESSON MD, FRANK G, 1601 STATE, 66801-5300  
 342-6989 3005650151  
 40 M 3005 71 OPH

BUTCHER MD, THOMAS P, 2029 HUNTINGTON RD, 66801-5423  
 0 1601340166  
 5 M 1601 34 OO

CAMPBELL MD, EDWARD G, 1601 STATE, 66801-5300  
 343-2900 1902610916  
 31 M 1902 62 FP

DAVIS MD, DAVID R, 2300 INDUSTRIAL RD #108, 66801-6636  
 0 2101280155  
 2 M 2101 28 OO

DICK JR MD, HENRY J, 25 W 5TH AVE, 66801-4035  
 342-2341 1902580251  
 27 M 1902 59 FP

EDWARDS MD, DAVID J, 1601 STATE ST, 66801-5300  
 343-1191 2803690289  
 43 M 2803 77 ORS

FORDYCE MD, NORMAN, 1130 CHESTNUT ST, 66801-2549  
 343-3533 1902670251  
 41 M 1902 67 OTO

GARCIA MD, GOULD C, 919 W 12TH AVE, 66801-5585  
 342-2521 3607580251  
 32 M 3607 65 IM

GEITZ MD, JAMES M, 919 W 12TH AVE, 66801-5585  
 342-2521 1902720509  
 46 M 1902 73 IM

GINAVAN MD, DUANE A, 1024 W 12TH AVE, 66801-5553  
 342-5876 1902620270  
 35 M 1902 63 FP

GLENN MD, JAMES N, 1601 STATE ST, 66801-5300  
 343-1191 4804660271  
 40 M 4804 70 ORS

HARRIS D.O., TIMOTHY P, 2506 W 15TH AVE, 66801-6102  
 342-6161 0  
 56 M 2879 91 GS

HICKS JR MD, THOMAS E, 1601 STATE ST, 66801-5300  
 343-2900 1902801533  
 53 M 1902 0 GS

HOPPER MD, CHARLES R, 1726 OLD MANOR RD, 66801-5634  
 0 1902470294  
 17 M 1902 47 OO

HOWELL MD, BARBARA JOYCE, 1601 STATE ST, 66801-5300  
 343-2900 3401780903  
 45 F 3401 82 PD

KNECHT MD, STEPHEN M, 1201 W 12TH AVE, 66801-2597  
 342-7722 1902700656  
 44 M 1902 72 R

KRETSINGER DO, W BROCK, 919 W 12TH AVE, 66801-5585  
 342-2521 2878770652  
 48 M 2878 81 IM

LLOYD MD, JOHN C, 1127 CHESTNUT ST STE 300, 66801-2523  
 343-6565 4802761088  
 50 M 4814 86 OBG

MIGUELINO MD, OLIVER M, 1201 W 12TH AVE, 66801-2597  
 343-6800 74801570864  
 35 M 74801 71 PATH

MONTGOMERY MD, MICHAEL L, 1601 STATE ST, 66801-5300  
 343-1191 1902821305  
 53 M 1902 86 ORS



NAGARAJU MD, ARRAMPRAJU, 1201 W 12TH AVE, 66801-2597  
 343-6800 49521730012  
 48 M 49521 84 P

NEUER MD, FREDERICK S, 1201 W 12TH AVE, 66801-2597  
 343-7893 3601710144  
 46 M 3601 74 R

PASTOR MD, VICTOR HUGO, 1601 STATE ST STE 101, 66801-5300  
 342-7715 13202680041  
 43 M 13202 78 U

PIERSON MD, MARK E, 1024 W 12TH AVE, 66801-5553  
 343-6864 1902801592  
 50 M 1902 82 FP

SCHELLINGER MD, RICHARD P, 1714 YUCCA LN, 66801-5640  
 342-5872 3005490498  
 22 M 3005 56 GS

SHEAR MD, JEFFREY M, 1645 W 20TH PARK PL, 66801-0000  
 343-6800 0  
 49 M 1902 0 PATH

SHERARD MD, SARAH L, 1201 W 12TH AVE, 66801-2597  
 343-6800 1902871566  
 61 F 1902 90 DR

SNOWBARGER MD, MARVIN D, 1601 STATE ST, 66801-5300  
 343-2900 1902551065  
 29 M 1902 55 FP

STEEVES MD, JOHN H, 603 LINCOLN ST, 66801-2440  
 343-1065 6701580875  
 32 M 6701 0 R

STONE MD, CHESTER W, 1601 STATE ST, 66801-5300  
 343-2900 1902801037  
 53 M 1902 85 HEM

UNDERWOOD MD, CHARLES C, 25 W 5TH AVE, 66801-4035  
 342-2341 1902320462  
 7 M 1902 32 IM

VANDER VELDE MD, STANLEY LEROY, 1527 BERKLEY RD, 66801-5559  
 0 1902430748  
 16 M 1902 43 OO

WRIGHT MD, KENDALL M, 1024 WEST 12TH, 66801-5553  
 343-2376 1902711232  
 45 M 1902 72 FP

## ERIE — 316

(Labette County Medical Society)

BRYAN MD, EMERY C, 212 N GRANT, 66733-1232  
 0 1902320098  
 4 M 1902 32 OO

CULVER D O, SONYA KATHERINE, PO BOX 78, 66733-0078  
 244-3267 2878860112  
 61 F 2878 87 FP

HANDSHY MD, STANLEY E, 324 S MAIN, 66733-1439  
 244-3291 1902790809  
 54 M 1902 82 FP

## ESKRIDGE — 913

(Flint Hills Medical Society)

WALKER MD, WILLIAM H, 108 W 2ND BOX 218, 66423-0218  
 0 2401381239  
 10 M 2401 40 OO

## EUDORA — 913

(Douglas County Medical Society)

BOCK MD, PETER A, PO BOX U, 66025-0821  
 542-2108 1902842299  
 57 M 1902 0 FP

FUNK MD, EDWARD D, RT 1/BOX 40A, 66025-9027  
 0 1902410186  
 4 M 1902 41 OO

HOLLADAY MD, KENNETH R, PO BOX G, 66025-0807  
 542-2345 1902580430  
 34 M 1902 61 FP

## EUREKA — 316

(Butler-Greenwood County Medical Society)

MCCLINTICK D O, MICHAEL D, 1602 N ELM ST, 67045-1099  
 583-7436 2878791102  
 50 M 2878 0 GP

SKAER MD, STANLEY ALLEN, 100 E 16TH, 67045-1067  
 583-7486 3901650828  
 40 M 3901 78 GS

## FORT SCOTT — 316

(Bourbon County Medical Society)

AKERS MD, GUY I, 618 MEADOW LN, 66701-3149  
 0 1902530017  
 20 M 1902 53 OO

ALDIS MD, HENRY, 6 E 13TH, 66701-2625  
 223-3100 1902410011  
 13 M 1902 41 GP

ALDIS MD, WILLIAM, 1123 S CRAWFORD, 66701-2531  
 0 1902440026  
 20 M 1902 44 OO

BAKER MD, MICHAEL P, 710 W 8TH ST, 66701-2498  
 223-3100 1902880069  
 62 M 1902 0 ENT

BENAGE MD, JOHN F, 821 BURKE, 66701-2409  
 223-2200 1902580065  
 32 M 1902 59 OBG

BRAUN MD, EDWARD W, 710 W 8TH ST, 66701-2404  
 223-3100 1902680108  
 42 M 1902 69 U

BURKE MD, JAMES J, 710 W 8TH ST, 66701-2404  
 223-3100 2834610089  
 35 M 2834 67 IM

CHOW MD, STANLEY Y, 1410 S EDDY, 66701-3407  
 0 24222390016  
 18 M 24222 63 OO

DUNLAP MD, PATRICK S, 821 BURKE ST, 66701-2409  
 856-5955 3005770521  
 53 M 3007 79 OBG

DUNSHEE MD, CARLYLE M, 710 W 8TH ST, 66701-2404  
 223-3100 1902570248  
 32 M 1902 57 GS

GETTLER MD, DEAN T, 710 W 8TH ST, 66701-2404  
 223-3100 1902570311  
 31 M 1902 57 GS

GOOD MD, JAMES T, RR 1 BOX 140, 66701-9739  
 0 2802450322  
 21 M 2802 62 OO

GRANTHAM MD, HERBERT G, 701 W 8TH ST, 66701-2403  
 223-2200 4501760582  
 49 M 4501 84 PATH

HALL D O, RALPH W, 710 W 8TH ST, 66701-2498  
 223-3100 0  
 57 M 2878 0 GS

IRBY MD, PRATT, 124 S CRAWFORD, 66701-3229  
 0 4705360222  
 13 M 4705 40 OO

KERR MD, GERALD F, 701 W 8TH ST, 66701-2403  
 223-6164 1902690626  
 44 M 1902 0 PATH

MCCANN MD, PATRICK E, 410 ROSEMARY LN, 66701-3425  
 0 1902590559  
 28 M 1902 60 OO

MCKENNA MD, MICHAEL J, 323 S JUDSON STE 120, 66701-2300

223-3950 1902640611  
38 M 1902 65 FP

NICHOLS MD, ROBERT R, 902 HORTON, 66701-2438

223-4100 2803760741  
50 M 2803 77 FP

PAGE D O, LESLIE F, 710 W 8TH ST, 66701-2404

223-3100 2878820889  
52 F 2878 83 OBG

PARRIS MD, ROGER D, 902 S HORTON, 66701-2438

223-4100 2803780768  
51 M 2803 0 FP

PHELPS MD, DAVID WAYNE, 902 HORTON, 66701-2438

223-4100 1902761060  
51 M 1902 77 FP

QUINLAN D O, GREGORY H, 710 W 8TH ST, 66701-2404

223-3100 2878770547  
50 M 2878 85 OPH

SABA MD, MEKKI M, 710 W 8TH ST, 66701-2404

223-3100 0  
40 M 52801 90 ORS

SCHMIDT MD, MARTY L, 710 W 8TH, 66701-2404

223-3100 1902881464  
62 M 1902 91 PD

SPENCER MD, JOHN HAROLD, 902 S HORTON, 66701-2438

223-4100 1902741051  
47 M 1902 76 FP

WEDDLE MD, DOUGLAS P, 902 S HORTON, 66701-2438

223-3100 1720691791  
43 M 1720 73 FP

WEILERT MD, STEVEN V, 821 BURKE ST, 66701-2409

223-2200 0  
57 M 2846 0 PATH

## FREDONIA — 316

*(Southeast Kansas Medical Society)*

BACANI MD, OSWALDO C, 525 MADISON PO BOX 576, 66736-0576

378-3700 74810700312  
44 M 74810 78 GS

RINDT MD, PHILLIP L, 432 N SEVENTH, 66736-1315

378-3341 1902710911  
45 M 1902 81 FP

SUMNER MD, RALPH N, PO BOX 537, 66736-0537

378-2311 1902570914  
31 M 1902 57 FP

## GARDEN CITY — 316

*(Southwest Kansas Medical Society)*

ARROYO MD, ZEFERINO, 603 N 5TH, 67846-5635

275-3700 74801670893  
0 M 74802 75 GS

BAUGHMAN MD, MICHAEL J, 310 E WALNUT ST STE 208, 67846-5500

275-8400 1902820104  
56 M 1902 87 ORS

BEGGS MD, DAVID F, 603 N 5TH, 67846-5635

275-3700 1902640025  
39 M 1902 65 IM

BRUNO MD, JAMES W, 1133 KANSAS PLZ, 67846-5870

276-8201 4706660441  
42 M 4706 73 FP

CALBECK MD, JOHN, 603 N FIFTH, 67846-5635

275-3700 1902751692  
50 M 1902 78 IM

CARPER MD, IVAN H, 2914 FLEMING ST APT 612, 67846-7308

276-4212 1902590125  
28 M 1902 60 EM

DAS MD, KRISHNA L, 310 E WALNUT ST STE 204, 67846-5500

276-4427 0  
45 M 49509 89 P

EICHHORN MD, FRANK D, BOX 719, 67846-0719

276-8132 1902560340  
25 M 1902 56 FP

FENTON MD, ROBERT M, 1106 E HACKBERRY ST, 67846-5833

0 1902540276  
20 M 1902 54 OO

FRY MD, LUTHER L, 310 E WALNUT STE 101, 67846-5500

275-7248 1902670269  
41 M 1902 68 OPH

GILBERT II MD, JOHN H, 603 N 5TH ST, 67846-5635

275-3700 1902700427  
46 M 1902 72 ORS

GREENWOOD MD, JAMES F, PO BOX 419, 67846-0419

275-3700 1611650732  
33 M 1611 67 FP

HANSEN MD, FRANK W, 603 N 5TH ST, 67846-5635

275-3700 1902761892  
49 M 1902 78 PUD

HUNSBERGER D.O., TERRY R, PO BOX 679, 67846-0679

275-7128 2878730502  
47 M 2878 74 FP

JACKSON MD, MICHAEL D, 603 N 5TH ST, 67846-5635

275-3700 4814760214  
51 M 4814 82 FP

KOKSAL MD, TOM, 1133 E KANSAS PLZ, 67846-5895

276-8201 1902760721  
51 M 1902 77 FP

LE MD, CHUONG DUC, 912 N 5TH ST, 67846-5640

275-4486 94101730381  
48 M 94101 83 GP

MARSHALL MD, ROBERT J, 603 N 5TH ST, 67846-5635

275-3774 1611773176  
44 M 1611 0 D

MATHEWS D O, THOMAS G, 310 E WALNUT ST STE 201, 67846-5500

275-9752 2878790122  
48 M 2878 0 OBG

MATTHEWS D O, GEORGE E, 310 E WALNUT ST STE 201, 67846-5500

275-9752 2878760151  
48 M 2878 83 OBG

MELIN MD, BRUCE D, 410 E WALNUT, 67846-5672

272-2222 5605770926  
51 M 5605 82 PATH

MEYERS MD, STEPHEN, 603 N 5TH ST, 67846-5635

275-3700 2834740853  
48 M 2834 77 PD

MILLER MD, ROBERT E, 603 N 5TH ST, 67846-5635

275-3700 4812550646  
26 M 4812 75 GS

OPPLIGER DO, ERIC R, 603 N 5TH, 67846-5635

275-3780 2878760444  
49 M 2878 78 GP

ROBERTS MD, SHELDON D, 603 N 5TH, 67846-5635

275-3740 3840812854  
55 M 3840 87 U

RODRIGUEZ MD, PAUL L, BOX 1729, 67846-1729

275-6111 4706660726  
39 M 4706 71 R

SHULL D O, MICHAEL W, 603 N 5TH, 67846-5635

275-3700 2878820307  
53 M 0 0 PD

TEARE MD, MAX E, 1007 DAVIS, 67846-5803

276-7689 1902540934  
28 M 1902 54 P

TRIOLO MD, PETER A, PO BOX 1905, 67846-1905

275-7445 64933790361  
43 M 64933 82 DR



TURNER MD, JOHN W, 1505 SPRUCE #45, 67846-6250

0	1902390584			
13	M	1902	39	OO

VACHAL MD, EVA, 410 E WALNUT, 67846-5672

272-2222	1902740941			
41	F	1902	77	PATH

WELCH MD, LAUREN A, PO BOX 763, 67846-0763

275-2141	1902711178			
45	M	1902	72	GS

WELCH MD, MAURA S, 508 N 7TH, 67846-5525

275-6111	1902752991			
50	F	1902	78	OBG

ZAUCHE MD, JAMES T, 603 N 5TH ST, 67846-5635

275-3730	2604792421			
53	M	2604	86	PD

ZELLER MD, MYRON J, 603 N 5TH ST, 67846-5635

275-3700	1902641048			
38	M	1902	65	OM

### GARDEN PLAIN — 316

*(Sedgwick County Medical Society)*

REINHARDT-WULF MD, TAISSIA L, PO BOX 273, 67050-0273

0	91302420012			
19	F	91302	60	OO

### GARDNER — 913

*(Johnson County Medical Society)*

NIKINIA MD, MORTEZA, PO BOX 576, 66030-0576

884-7822	51701670187			
38	M	51701	78	GS

REECE MD, A THOMEN, PO BOX 576, 66030-0576

884-7822	1902630691			
37	M	1902	64	FP

### GARNETT — 913

*(Anderson County Medical Society)*

HARRIS JR MD, CLAIB B, 101 S OAK ST, 66032-1018

0	1902440646			
17	M	1902	44	OO

LEITCH MD, DAVID A, 117 W 6TH, 66032-1401

448-5421	1902630526			
38	M	1902	64	FP

STEVENS MD, MILDRED J, 202 W 4TH, 66032-1316

448-5454	1902470600			
23	F	1902	47	FP

### GIRARD — 316

*(Crawford-Cherokee County Medical Society)*

HALL MD, WESLEY H, PO BOX 158, 66743-0158

724-6154	1902570361			
25	M	1902	57	FP

HALLABA MD, MOHEB A S, 307 N HOSPITAL DR STE 5, 66743-9698

724-8899	33003540036			
29	M	33003	91	GPVS

### GLASCO — 913

*(Cloud County Medical Society)*

HARWOOD MD, CLAUDE J, PO BOX 428, 67445-0428

0	1902550506			
25	M	1902	55	OO

### GODDARD — 316

*(Sedgwick County Medical Society)*

GOODWIN MD, MARY K, PO BOX 560, 67052-0560

794-8655	1902770506			
53	F	1902	80	FP

### GREAT BEND — 316

*(Barton County Medical Society)*

ALLEN JR MD, WILLIAM R, 3623 BROADWAY RM 117, 67530-0000

792-2617	1902460027			
46	M	1902	80	R

BEAHM MD, DONALD E, PO BOX 9, 67530-0009

792-3626	1902710058			
45	M	1902	72	OPH

BROWN MD, C REIFF, 1701 K 96 HWY, 67530-3014

792-1248	3901570093			
31	M	3901	0	ORS

BROZEK MD, JEFFREY E, 1309 POLK, 67530-3618

792-5341	1902830371			
57	M	1902	84	FP

CAVANAUGH MD, CLAIR J, 1320 CLEVELAND, 67530-3633

0	1803470061			
23	M	1803	52	OO

CAVANAUGH MD, TERRENCE J, 3515 BROADWAY, 67530-3633

792-2617	1902820309			
55	M	1902	89	R

DEGNER MD, REX A, 3515 BROADWAY, 67530-3633

792-2511	1902850399			
58	M	1902	85	PATH

DOERRY MD, KAREN E, 1309 POLK, 67530-3618

792-5341	1902880379			
58	F	1902	0	FP

EDMONDS MD, MARTA J, 3520 LAKIN, 67530-3641

792-5437	1902880417			
52	F	1902	91	PD

EVANS MD, WILLIAM R, 1912 LINCOLN, 67530-7551

0	1902530271			
25	M	1902	53	OO

FIESER MD, CARL W, 3515 BROADWAY, 67530-3633

792-2617	1902710376			
45	M	1902	75	R

FLESKE MD, LEONARD T, 1514 K 96 HWY, 67530-3012

792-4383	1902751994			
49	M	1902	75	ORS

GILLENWATER MD, DAVID T, 2400 DOVE TER, 67530-6813

0	1902860611			
60	M	1902	0	AN

JONES MD, EDWARD L, 3515 BROADWAY, 67530-3633

792-2511	1902610410			
35	M	1902	62	PATH

KING MD, WILLIAM T, 3421 FOREST, 67530-3605

793-3501	1902610461			
35	M	1902	62	OBG

KIRBY MD, MERLIN G, 3520 LAKIN, 67530-3646

793-3091	1902560633			
31	M	1902	56	GS

MARSHALL MD, ROGER W, 3421 FOREST, 67530-3605

792-2151	1902871124			
60	M	1902	91	OBG

MCALLASTER MD, WENDALE E, 2111 FOREST, 67530-4018

793-3591	1902540624			
24	M	1902	54	GS

PECK MD, ROGER, 3623 BROADWAY STE 2-D, 67530-3644

793-8429	1902810613			
54	M	1902	84	IM

PRESTON MD, RICHARD, 3623 BROADWAY STE 2-D, 67530-3644

793-8429	1902690863		
42	M	1902	70 IM

REDDY MD, SATTI S, 2409 ROCKBRIDGE RD, 67530-6841

792-5938	49561660114		
35	M	49504	77 U

REPLOGLE MD, CHARLES B, 2111 FOREST, 67530-4018

793-3591	1902530726		
27	M	1902	53 FP

RUIZ MD, CARLOS M, PO BOX 1348, 67530-1348

792-3210	27501521006		
25	M	27501	70 P

SCHUETZ MD, PERRY N, 1422 POLK BOX A, 67530-3619

793-8414	1902710996		
45	M	1902	72 OPH

SCHUKMAN MD, JAY S, 1309 POLK, 67530-3618

792-5341	1902752737		
50	M	1902	76 FP

SHIVEL MD, DAVID G, 3523 FOREST, 67530-3607

793-3523	1902551014		
28	M	1902	55 FP

SMITH MD, PERRY MILTON, 1309 POLK, 67530-3618

792-5341	1902771383		
52	M	1902	78 FP

STANG MD, PATRICK W, 3808 21ST ST, 67530-7419

792-8637	1902871621		
61	M	1902	91 P

UNREIN MD, ROBERT J, 1017A JACKSON, 67530-4219

792-2504	1902580987		
29	M	1902	60 FP

WIENS MD, LYNN A, 3520 LAKIN ST STE 105, 67530-3646

792-5200	1902871841		
61	M	1902	0 A

## GREENSBURG — 316

*(Iroquois County Medical Society)*

BRADLEY MD, J RODERICK, 224 S SPRUCE, 67054-1732

0	1902470081		
23	M	1902	47 OO

CANNATA MD, GENE, 502 S WALNUT, 67054-1950

723-2127	1902790337		
54	M	1902	81 FP

WALDORF JR MD, MELVIN H, 604 S BAY, 67054-1903

0	1902470685		
23	M	1902	47 OO

## HALSTEAD — 316

*(Harvey County Medical Society)*

AILLON MD, ALEJANDRO J, 327 CHESTNUT, 67056-2006

835-2241	26402630018		
39	M	26402	74 TS

BEUGELSDIJK MD, HENRY PETER, 225 POPLAR, 67056-2220

835-3404	1902741433		
49	M	1902	77 AN

BURNETT MD, A DEAN, 504 COLLEGE, 67056-2137

0	1902520119		
21	M	1902	52 OO

DECKER MD, DONALD D, 915 W 4TH, 67056-2020

0	1902560285		
31	M	1902	56 OO

EASTES MD, GARY DEAN, 327 CHESTNUT, 67056-2006

835-2241	4812710180		
44	M	4812	78 U

FEDOR MD, BARBARA, 327 CHESTNUT, 67056-2006

835-2241	4814841966		
52	F	4814	88 IM

FRANSEN MD, PAUL H, 327 CHESTNUT, 67056-2006

835-2241	6501710065		
46	M	6501	74 FP

GNAU MD, FREDRIC B, RR 2 BOX 22AA, 67056-9802

835-2241	1902680329		
42	M	1902	69 OTO

HOOVER MD, WILFORD D, 327 CHESTNUT, 67056-2006

835-2241	1902550549		
30	M	1902	55 TS

KIMMEL MD, KENNETH K, 327 CHESTNUT, 67056-2006

835-2241	1902770808		
52	M	1902	78 IM

RIZZA MD, ROBERT G, RTE 2 BOX 92C, 67056-9749

835-2827	1201560566		
30	M	1201	65 PD

TEJANO MD, NEONIL A, 327 CHESTNUT, 67056-2006

835-2241	74808661032		
43	M	74808	72 ORS

## HANOVER — 913

*(Northeast Kansas Medical Society)*

WARREN MD, LINDA D, BOX 38, 66945-0038

337-2214	1902700257		
44	F	1902	71 FP

WARREN MD, ROGER D, BOX 38, 66945-0038

337-2214	1902570990		
31	M	1902	57 GS

## HAYS — 913

*(Central Kansas Medical Society)*

ADAMS MD, ALAN W, 2220 CANTERBURY, 67601-2323

623-2121	1902800014		
54	M	1902	81 FP

ALBERS MD, ROBERT C, 2501 E 13TH ST STE 10, 67601-2764

625-4224	1902770018		
48	M	0	82 IM

APPLEGATE JR MD, FRANCIS R, 1010 DOWNING AVE, 67601-2461

628-8218	1902550026		
30	M	1902	55 OPH

BAUER MD, RICHARD D, 1517 E 27TH ST, 67601-2111

625-0044	1902800073		
54	M	1902	81 OBG

BOWERMAN MD, ROBERT F, BOX 833, 67601-0833

628-6718	1102831582		
44	M	1102	85 R

BRENNER MD, CYNTHIA L, 2501 E 13TH STE 10, 67601-2735

625-4224	0		
60	F	1902	92 IM

BULA MD, RALPH E, 3209A WILLOW ST, 67601-1726

0	1902370117		
12	M	1902	37 OO

CARLSON MD, EARL V, DRAWER 430, 67601-0430

628-8221	3005560071		
31	M	3005	65 ORS

CECIL III MD, JOHN, BOX 833, 67601-0833

625-6521	4804690145		
43	M	4804	72 R

COOK D O, RANDY A, 105 W 13TH ST, 67601-3650

628-3608	2878810247		
52	M	2878	0 IM

COX MD, ROBERT H, 217 E 32ND ST, 67601-0000

628-6128	1902701300		
43	M	1902	71 PD

DOSS MD, J RICHARD, 1517 E 27TH ST, 67601-2111

625-0044	401720219		
46	M	401	0 OBG



EDDY MD, VICTOR M, 105 W 13TH ST, 67601-3650  
 625-2551 1902550328  
 29 M 1902 56 GS

GATSCHET MD, TIMOTHY P, 2712 PLAZA AVE, 67601-1922  
 625-3665 1902850577  
 50 M 1902 87 P

HAIGLER MD, JAMES P, 217 W 24TH ST, 67601-2905  
 0 3006390322  
 13 M 3006 39 OO

HALLING MD, L WILLIAM, 3000 TAM O'SHANTER DR, 67601-1830  
 0 5002570175  
 27 M 5002 68 OO

HOLWEGER MD, RONALD, 2503 CANTERBURY RD, 67601-0000  
 625-4363 512771955  
 45 M 512 86 OPH

HUTCHISON MD, GLEN C, 3200 COUNTRY LN, 67601-1711  
 0 1902500312  
 21 M 1902 50 OO

KANE JR MD, WILLIAM M, PO BOX 518, 67601-0518  
 0 1001540340  
 27 M 1001 62 OO

KELLY MD, A CHRISTINE, 1010 DOWNING AVE, 67601-2461  
 625-8553 2846770219  
 49 F 2846 81 GS

KIFER MD, C JAMES, BOX 833, 67601-0833  
 625-6521 1902710562  
 45 M 1902 72 DR

LASLEY MD, MICHAEL B, 2501 E 13TH ST STE 7, 67601-2764  
 628-3217 1902710627  
 45 M 1902 76 GS

LOEB MD, ELBIE L, 2501 E 13TH ST STE 10, 67601-0000  
 625-4224 1902781052  
 51 M 1902 79 IM

MANN MD, JOHN B, 201 E 7TH ST, 67601-4152  
 628-3051 1902851158  
 59 M 1902 90 PD

MATTICK MD, IRVIN H, 2900 COUNTRY LN, 67601-1710  
 0 2802431077  
 18 M 2802 54 OO

MCDONALD MD, KEVIN R, PO BOX 1176, 67601-1176  
 628-6014 3006780562  
 52 M 3006 83 U

MCDONALD MD, THOMAS L, 1010 DOWNING AVE, 67601-2461  
 628-8218 1902841217  
 53 M 1902 85 OPH

NEIL MD, ROY N, 105 W 13TH ST, 67601-3650  
 628-8341 3005650525  
 38 M 3005 71 PATH

NEWCOMB MD, WARD M, 1300 E 13TH, 67601-2551  
 625-5646 3005710633  
 47 M 3005 75 PATH

NOORDHOEK MD, LYLE J, 1300 E 13TH, 67601-2551  
 625-5646 1902831386  
 56 M 1902 84 PATH

PRASAD MD, BABU, 2220 CANTERBURY RD, 67601-2323  
 625-7301 0  
 48 M 49562 83 TR

RAJEWSKI MD, RICHARD L, 2509 CANTERBURY RD, 67601-2233  
 628-6151 1902761086  
 51 M 1902 77 FP

RICHARDS MD, DALLAS LEE, 2501 E 13TH STE 10, 67601-2764  
 625-4224 1902742359  
 49 M 1902 76 IM

RUTNGAMUG MD, LUECHA, 105 W 13TH, 67601-3650  
 628-6175 89101680216  
 40 M 89101 76 GS

SCHULTZ MD, CHARLES CAMERON, 2501 E 13TH ST STE 7, 67601-2764  
 628-3217 1902831602  
 54 M 1902 92 GPVS

STADALMAN MD, ROSS EUGENE, 2501 E 13TH STE 7, 67601-2764  
 628-3217 1902731101  
 47 M 1902 74 GS

STUMP MD, HARL G, 105 W 13TH, 67601-3650  
 625-2551 1902650926  
 39 M 1902 66 GS

TAN MD, LOURDES R, 208 E 7TH, 67601-4117  
 628-2871 74809670248  
 34 F 74811 88 P

TILLMAN JR D O, DONALD K, 2707 VINE ST, 67601-1986  
 628-3231 0  
 59 M 1175 0 D

WATTS MD, HARRY E, 2922 HILLCREST DR, 67601-1716  
 0 702540712  
 27 M 702 60 OO

WEBER MD, WALLACE N, 2707 VINE STE 10, 67601-1908  
 628-3231 1902691061  
 43 M 1902 70 D

WERTH MD, DARRELL D, PO BOX 1176, 67601-1176  
 628-6014 1902753008  
 50 M 1902 76 U

WILCOX JR MD, HOWARD L, PO DRAWER 430, 67601-0430  
 628-8221 1902701237  
 44 M 1902 71 ORS

WOODS MD, GREGORY A, 2818 VINE, 67601-1927  
 628-8221 1902831980  
 56 M 1902 84 ORS

WRIGHT MD, MICHAEL J, 2501 E 13TH ST STE 2, 67601-2731  
 625-6521 0  
 59 M 1902 92 DR

## HAYSVILLE — 316 (Sedgwick County Medical Society)

MAGSALIN MD, ROMULO D, 141 N MAIN, 67060-1202  
 529-2151 74808661792  
 40 M 74808 78 PATH

## HERINGTON — 913 (Dickinson County Medical Society)

BUSTOS MD, JONAS G, 1005 NORTH B, 67449-1600  
 258-3705 74810680478  
 41 M 74810 76 GS

## HESSTON — 316 (Harvey County Medical Society)

DIENER MD, CLAYTON H, 101 W VESPER, 67062-8927  
 327-4122 1902540225  
 18 M 1902 54 GS

YODER MD, VERNON E, ROUTE #1 BOX 136A, 67062-9425  
 283-2400 4812611017  
 31 M 4802 68 P

## HIAWATHA — 913 (Northeast Kansas Medical Society)

DUCKETT MD, THOMAS G, 201 MIAMI, 66434-2018  
 0 1902340111  
 10 M 1902 34 OO

HAYES MD, KRIS A, 200 DELAWARE, 66434-2112  
 742-2131 1902790825  
 54 M 1902 81 GS

KETTER MD, IVAN C, 314 OREGON ST, 66434-2218  
 742-2161 1902870918  
 60 M 1902 0 FP

LARSON MD, DELBERT L, 314 OREGON, 66434-2218  
 742-2161 1803640510  
 30 M 1803 66 FP

LUNDQUEST MD, DAVID E, 300 UTAH, 66434-2314  
 742-2131 1902831076  
 54 M 1902 86 PATH

MEIDINGER MD, RAY, 111 S FOURTH, 66434-2302  
 742-2135 3005320410  
 3 M 3005 32 FP

SEARIGHT MD, LOWELL R, PO BOX 316, 66434-0316  
 742-3523 1902810915  
 48 M 1902 88 FP

SINNING MD, GARY, 314 OREGON, 66434-2218  
 742-2161 1902741778  
 49 M 1902 77 FP

### HILL CITY — 913 (Central Kansas Medical Society)

REDDY MD, B N, 114 E WALNUT, 67642-1722  
 674-2191 49557670024  
 38 M 49557 80 TR

REDDY MD, P JAGANNADHA, 80 WALNUT DR, 67642-2239  
 674-2191 49511660024  
 42 M 49511 73 GS

### HILLSBORO — 316

ENS MD, GERHARD GEORGE, 405 S WILSON, 67063-1827  
 0 1902550379  
 20 M 1902 55 OO

### HOISINGTON — 316 (Barton County Medical Society)

MOORE MD, ROBERT, 1015 N MAIN ST, 67544-1745  
 0 3901530504  
 22 M 3901 53 OO

### HOLTON — 913 (Shawnee County Medical Society)

CHAVEZ MD, CARLOS A, 418 W 5TH, 66436-1506  
 364-3116 64914560011  
 33 M 64914 0 GP

HARTER MD, TERRY L, 418 W 5TH, 66436-1506  
 364-2126 1902870713  
 57 M 1902 90 FP

HUTCHINS MD, JOEL R, 418 W 5TH PO BOX 466, 66436-0466  
 364-2126 1902830908  
 49 M 1902 84 FP

### HORTON — 913 (Northeast Kansas Medical Society)

FRANCISCO MD, EDGARDO, PO BOX 6, 66439-0006  
 486-2646 74808570665  
 31 M 74802 0 GP

### HOXIE — 913 (Northwest Kansas Medical Society)

NEUENSCHWANDER MD, JOHN, PO BOX 258, 67740-0258  
 675-3292 2802510619  
 26 M 2802 52 FP

NEUENSCHWANDER MD, JOHN RAND, PO BOX 258, 67740-0258  
 675-3292 1902720878  
 47 M 1902 73 FP

### HUGOTON — 316 (Seward County Medical Society)

LENEVE MD, ROBERT T, 209 S JEFFERSON ST, 67951-2527  
 0 3901460387  
 21 M 3901 51 OO

### HUMBOLDT — 316 (Southeast Kansas Medical Society)

LONG MD, EDWARD E, 818 BRIDGE ST, 66748-1832  
 0 1902500401  
 21 M 1902 50 OO

NEEF MD, DOUG STEVENS, 202 S 9TH, 66748-1908  
 473-2275 2803840761  
 57 M 2803 85 FP

### HUTCHINSON — 316 (Reno County Medical Society)

BARKER MD, STANTON L, 2101 N WALDRON ST, 67502-1197  
 669-2512 1902790108  
 54 M 1902 82 FP

BAUER MD, THOMAS A, 2101 N WALDRON ST, 67502-1197  
 669-2500 1902670030  
 41 M 1902 68 IM

BLITZ MD, ROGER, 2020 N WALDRON ST, 67502-1193  
 663-6780 2105630088  
 38 M 2105 0 ORS

BORRA MD, MARIO J, 2802-B NOTTINGHAM DR, 67502-2592  
 0 2401470134  
 24 M 2401 54 OO

BOS MD, NORMAN C, 2606 N VANBUREN, 67502-2016  
 0 1611470211  
 24 M 1611 61 OO

BRAUN MD, STEVEN D, 2101 N WALDRON ST, 67502-1131  
 0 1902870241  
 61 M 1902 90 RO

BROWN MD, ROBERT A, 1100 N MAIN ST, 67501-4406  
 669-6690 0  
 0 M 0 0 OBG

CARLSON MD, ERIC A, 2101 N WALDRON ST, 67502-1131  
 669-2500 1902880221  
 62 M 1902 92 ON

CASEY MD, JAMES L, 1100 N MAIN, 67501-4406  
 669-6715 3005690080  
 42 M 3005 77 PD

CULLAN MD, GEORGE E, 2101 N WALDRON ST, 67502-1131  
 669-2500 3006831124  
 53 M 3006 0 OBG

DAVIS MD, W D, 1100 N MAIN ST, 67501-4406  
 669-6690 1902700192  
 44 M 1902 0 FP

DEPENBUSCH MD, FRANCIS L, 1708 E 23RD, 67502-1114  
 663-7187 1902650179  
 38 M 1902 66 OPH

DOBBS MD, MICHAEL E, 1100 N MAIN ST, 67501-4406  
 669-6690 4802750469  
 49 M 4802 90 OBG



ECKART MD, DE MERLE E, 2517 E 45TH, 67502-1601  
 0 1902400181  
 14 M 1902 40 OO

FALTER MD, RICHARD T, 1708 E 23RD ST, 67502-1114  
 663-7187 1902670200  
 38 M 1902 68 OPH

FAST D O, JAMES I, 1100 N MAIN, 67501-4406  
 669-6690 0  
 50 M 1676 91 FP

FESEN MD, MARK R, 2101 N WALDRON ST, 67502-1131  
 669-2500 3306871446  
 59 M 3306 0 ON

FOSS MD, DANIEL C, 2101 N WALDRON ST, 67502-1131  
 669-2500 1902690375  
 43 M 1902 70 GE

FRIESEN MD, DOUGLAS A, 1701 E 23RD AVE, 67502-1105  
 665-2107 1902830673  
 55 M 1902 83 AN

GILLAN JR MD, DALE E, 1100 N MAIN ST, 67501-4406  
 669-2500 1902780668  
 53 M 1902 79 GS

GRAVES MD, KATHRYN, 2101 N WALDRON ST, 67502-1197  
 669-2500 1902742146  
 49 F 1902 76 D

GRINIS MD, GEDAS M, 2101 N WALDRON ST, 67502-1197  
 669-2500 2834830551  
 56 M 2834 0 U

HALE MD, RALPH, 37 LINKSLAND DR, 67502-8979  
 0 1902460183  
 18 M 1902 46 OO

HEDRICK MD, KENNETH E, 36 LINKSLAND DR, 67502-8951  
 0 1902530360  
 27 M 1902 53 OO

HOLCOMB MD, MURRAY A, 2101 N WALDRON ST, 67502-1131  
 669-2500 1902860866  
 60 M 1902 0 GS

HOLDERMAN MD, WALLACE D, 2101 N WALDRON ST, 67502-1131  
 669-2500 1902540471  
 28 M 1902 54 ORS

ISSINGHOFF MD, CHAD J, 2101 N WALDRON ST, 67502-1197  
 669-2500 1902830932  
 55 M 1902 0 PD

JARROTT MD, JOHN B, 3003 N MONROE ST, 67502-2333  
 0 1902400300  
 16 M 1902 40 OO

JOHNSON MD, RANDLE C, 1100 N MAIN ST, 67501-4406  
 663-2151 1902720673  
 46 M 1902 77 IM

KENNING MD, GERALD F, 17 BEECHWOOD LN, 67502-1802  
 669-8917 3006820483  
 54 M 3006 85 AN

KLOSTERHOFF MD, BRUCE E, 1715 E 23RD AVE, 67502-1188  
 665-2240 1611711073  
 45 M 1611 72 P

LESSER MD, DANE A, 2101 N WALDRON ST, 67502-1197  
 669-2500 3901750784  
 49 M 3901 81 U

LESSIN MD, DIANNA L, 2101 N WALDRON ST, 67502-1197  
 669-2500 0  
 55 F 1902 0 N

LOMASNEY MD, PATRICK J, 2101 N WALDRON ST, 67502-1131  
 669-2500 1720821717  
 55 M 1720 0 IM

MALLONEE MD, WILLIAM M, 2101 N WALDRON ST, 67502-1131  
 669-2500 3901820987  
 51 M 3901 0 N

MATLOCK MD, MARK S, 2101 N WALDRON ST, 67502-1197  
 669-2500 3901821011  
 56 M 3901 87 D

MCCOY MD, CHARLES T, 100 N MAIN ST STE 813, 67501-5259  
 0 1902410402  
 16 M 1902 41 OO

MCKEE MD, GARY S, 2101 N WALDRON ST, 67502-1197  
 669-2500 1902831203  
 57 M 1902 0 R

MCMULLEN MD, JOSEPH E, 2101 N WALDRON ST, 67502-1131  
 669-2578 1902620563  
 33 M 1902 63 GS

MILLS MD, STEPHEN C, 1100 N MAIN ST, 67501-4406  
 669-6690 3901700663  
 44 M 3901 87 DR

MULL MD, JOHN C, 2101 N WALDRON ST, 67502-1131  
 669-2500 1902610606  
 34 M 1902 0 OBG

NANNEY MD, GREGORY D, 1100 N MAIN ST, 67501-4406  
 669-6690 3901811210  
 55 M 3901 86 HEM

NEUSCHAFER MD, DARREL R, 2101 N WALDRON ST, 67502-1197  
 669-2500 1902740801  
 48 M 1902 0 OBG

NUNEMAKER MD, MARION E, PO BOX 1129, 67504-1129  
 0 1902460451  
 21 M 1902 46 OO

PAULY MD, TIMOTHY R, 2101 N WALDRON ST, 67502-1131  
 669-2500 1902821488  
 56 M 1902 85 FP

PEASE MD, GARY L, 1712 E 23RD AVE, 67502-1195  
 662-4458 3005670585  
 41 M 3005 77 OTO

PERKINS MD, JACK L, 9 PRAIRIE DUNES DR, 67502-8787  
 0 1902530645  
 24 M 1902 53 OO

RAO MD, MEENA, 2101 N WALDRON, 67502-0000  
 669-2500 0  
 57 F 49509 93 PD

RATE MD, PEGGY S, 2101 N WALDRON ST, 67502-1131  
 669-2500 1902730423  
 46 F 1902 0 PD

RATE MD, ROBERT G, 2101 N WALDRON ST, 67502-1197  
 669-2500 1902730920  
 47 M 1902 0 IM

RICHMAN MD, DANA R, 4 OAKWOOD LN, 67502-1800  
 669-2500 1902831548  
 54 M 1902 91 FP

RICHMAN MD, DAVID S, 2101 N WALDRON ST, 67502-1131  
 669-2500 1902831556  
 57 M 1902 0 FP

RODGERS MD, CHRISTOPHER P, 2101 N WALDRON ST, 67502-1131  
 669-2500 1902810664  
 55 M 1902 0 FP

SAVAGE MD, W RICHARD, 1100 N MAIN ST, 67501-4406  
 669-6690 3901741068  
 48 M 3901 0 IM

SAYLOR MD, RANDEL L, 2101 N WALDRON ST, 67502-1197  
 669-2500 1720803247  
 53 M 1720 85 OPH

SCHEEL MD, BRADLEY J, 1100 N MAIN ST, 67501-4406  
 663-2151 1902742006  
 48 M 1902 0 GER

SCHEKALL MD, MICHAEL J, 2101 N WALDRON ST, 67502-0000  
 669-2500 3006870839  
 60 M 3006 90 DR

SCOTT MD, TIMOTHY R, 2101 N WALDRON ST, 67502-0000  
 669-2500 0  
 48 M 2834 0 IM

SELLERS D O, SCOTT, 10 S MAIN, 67505-1508  
 669-6600 2879850366  
 68 M 2879 0 FP

SHEARS MD, ROBERT N, 1100 N MAIN, 67501-4406  
 0 1902441359  
 20 M 1902 44 OO

SMITH MD, THOMAS W, 1712 E 23RD AVE, 67502-1195  
 662-4458 1643680722  
 43 M 1643 80 OTO

SOURK MD, ROBERT L, 2101 N WALDRON ST, 67502-1197  
 669-2500 1902771413  
 52 M 1902 0 IM

SPENCER MD, JOHN P, 1905 E 23RD AVE, 67502-0000  
 663-4500 0  
 43 M 1611 0 CD

SPITZER MD, JEROME S, 1100 N MAIN ST, 67501-4406  
 669-6690 3005590611  
 33 M 3005 0 FP

STAFFORD MD, ROBERT W, 2101 N WALDRON ST, 67502-1131  
 669-2500 2101691091  
 43 M 2101 74 IM

STOUT MD, JAMES M, 3918 N MISSION DR, 67502-1131  
 0 1902551111  
 29 M 1902 55 OO

SUMNER MD, JOYCE R, 3011 NUTMEG LN APT B, 67502-2967  
 0 1902510768  
 26 F 1902 51 OO

SUMNER MD, MARION M, 3011 NUTMEG LN APT B, 67502-2967  
 0 1902520674  
 26 M 1902 52 OO

TANKSLEY MD, JOHN A, 2020 N WALDRON ST, 67502-0000  
 663-6780 2701781417  
 53 M 2701 92 ORS

TAYLOR MD, ELWYN J, 6500 N PLUM, 67502-4847  
 0 1902610797  
 34 M 1902 62 OO

TISDALE MD, TERRANCE C, 2020 N WALDRON ST, 67502-1193  
 663-6780 6701610499  
 36 M 6701 0 ORS

TWEITO MD, DAVID H, 2101 N WALDRON ST, 67502-1197  
 669-2500 1803640889  
 38 M 1803 69 PD

WESLEY MD, MICHAEL R, 2101 N WALDRON ST, 67502-1131  
 669-2500 1902801291  
 54 M 1902 0 FP

WOODS MD, DENNIS D, 2101 N WALDRON ST, 67502-1131  
 669-2500 1902861994  
 60 M 1902 87 IM

WORTMAN MD, JACK A, 2101 N WALDRON ST, 67502-1197  
 669-2500 1902620938  
 34 M 1902 63 IM

### INDEPENDENCE — 316 *(Southeast Kansas Medical Society)*

ATWOOD MD, LARRY C, PO BOX 314, 67301-0314  
 331-8610 1902800057  
 54 M 1902 80 FP

BARBERA MD, PORTER E, 700 E BIRCH ST, 67301-4326  
 0 4707460046  
 19 M 4707 47 OO

CHANG MD, PHILEMON D, PO BOX 556, 67301-0556  
 331-0440 3905850503  
 51 M 3905 0 IM

DUTTON MD, KARRI D, 900 W MYRTLE STE 102, 67301-0000  
 331-2806 0  
 64 F 4814 93 PD

ELLIS MD, BOBBY J, P O BOX 1043, 67301-1043  
 331-7390 1902770450  
 51 M 1902 89 IM

EMPSON MD, CHARLES L, PO BOX 848, 67301-0848  
 331-6019 1902680256  
 37 M 1902 68 FP

KNUTH MD, KENNETH L, 2900 TERRA VISTA DR, 67301-1536  
 331-2200 1902500371  
 22 M 1902 50 R

MASON MD, WAYNE E, PO BOX 388, 67301-0388  
 331-2200 1902610533  
 36 M 1902 0 R

MEARS D O, GREGORY H, PO BOX 825, 67301-0825  
 331-5440 2878850621  
 48 M 2878 87 FP

PHIPPS MD, RONNY, PO BOX 843, 67301-0843  
 331-7901 512792472  
 64 M 512 82 FP

SHAH MD, ASHOK H, PO BOX 944, 67301-0944  
 331-0177 49548680173  
 41 M 49548 0 OBG

STACEY MD, KIMBALL, PO BOX F, 67301-1015  
 331-6350 1902792089  
 48 M 1902 82 IM

UMLAUF D O, EDWARD S, PO BOX 988, 67301-0988  
 331-0100 0  
 52 M 3875 92 IM

### IOLA — 316 *(Allen County Medical Society)*

BILLINGSLEY JR MD, JOHN A, 517 N WALNUT ST, 66749-2247  
 0 1902580090  
 31 M 1902 59 OO

DICK MD, WILLIS G, 4 EAGLE DR, 66749-9276  
 0 512410138  
 13 M 512 71 OO

SINGER MD, GLEN D, 201 WEST ST, 66749-2825  
 365-3115 1902771359  
 49 M 1902 0 FP

WOLFE MD, BRIAN D, 201 WEST ST, 66749-2825  
 365-3115 1902792135  
 53 M 1902 0 FP

### JUNCTION CITY — 913 *(Geary County Medical Society)*

BOLLMAN MD, CHARLES S, PO BOX 397, 66441-0397  
 762-4575 3901660122  
 41 M 3901 74 GS

BRETHOUR MD, LESLIE J, 207 S EVED, 66441-3431  
 238-4151 3006390136  
 13 M 3006 41 FP

CRAIG MD, THOMAS A, 1106 ST MARY'S RD STE 204  
 66441-4158  
 762-4255 1902780412  
 53 M 1902 81 IM

DARABANT MD, TITUS E, 1106 ST MARY'S RD 66441-4158  
 762-7655 78103640058  
 38 M 78103 0 GP

HAMEL MD, GREGORY L, 1106 ST MARY'S RD STE 202 66441-415  
 762-6040 1902820678  
 56 M 1902 85 FP

MACE MD, RONALD D, 1106 ST MARY'S RD STE 305 66441-4158  
 762-4884 3901740738  
 42 M 3901 75 FP

PRIDDY D O, MAURICE F, 1219 MCFARLAND, 66441-3304  
 0 0  
 31 M 2878 0 OO



SCOTT MD, ALEX, 835 W 5TH PO BOX 1087, 66441-1087  
 0 5605480448  
 23 M 5605 50 OO  
 WINGER MD, RAYMOND E, PO BOX 1363, 66441-1363  
 239-7777 1902771626  
 51 M 1902 93 FP

### **KANOPOLIS — 913** *(Central Kansas Medical Society)*

KEPKA MD, DENNIS J, PO BOX 132, 67454-0132  
 472-3184 56101750871  
 43 M 56101 93 FP

### **KANSAS CITY — 913** *(Wyandotte County Medical Society)*

ALEXANDER MD, CHARLES E, 21 N 12TH ST #400, 66102-5161  
 321-3355 401700013  
 43 M 401 74 OBG

ALLEGRE MD, ANN, 155 S 18TH ST #275, 66102-5654  
 621-1000 1902771715  
 50 F 1902 78 IM

ARAKAWA MD, KASUMI, 3901 RAINBOW BLVD, 66160-7415  
 588-6670 57249530010  
 26 M 57211 64 AN

ARDINGER JR MD, ROBERT H, 3901 RAINBOW BLVD, 66160-7330  
 588-6311 518830040  
 56 M 518 90 PDC

ASHER MD, MARC A, 3901 RAINBOW BLVD, 66160-7387  
 588-6130 1902620024  
 36 M 1902 63 ORS

ATOR MD, GREGORY A, 3901 RAINBOW BLVD, 66160-7380  
 588-6713 4804850070  
 57 M 4804 92 NOTO

AUSTENFELD MD, MARK S, 3901 RAINBOW BLVD, 66160-7390  
 588-7566 1902830100  
 53 M 1902 89 U

BAEKE JR MD, JOHN L, 6013 LEAVENWORTH RD, 66104-1498  
 299-2069 0  
 57 M 1902 0 PS

BAKER MD, GARY L, 3901 RAINBOW BLVD, 66160-0000  
 588-5000 2802770092  
 51 M 2802 89 PS

BARTHOLOME MD, WILLIAM G, 3901 RAINBOW BLVD, 66160-7311  
 588-7042 1902690065  
 44 M 1902 70 PD

BATNITZKY MD, SOLOMON, 3901 RAINBOW BLVD, 66160-7234  
 588-6835 83601640077  
 40 M 83601 77 DR

BAXTER MD, KIRKMAN G, 3901 RAINBOW BLVD, 66160-7234  
 588-6810 1902830207  
 57 M 1902 85 DR

BEATTY MD, ROBERT M, 8919 PARALLEL PKY #331, 66112-1655  
 299-9507 4901780094  
 52 M 4901 91 NS

BECKER MD, LESLIE E, 8919 PARALLEL PKY #416, 66112-1655  
 299-8000 1003460033  
 23 M 1003 65 U

BENSON MD, KIRK T, 3901 RAINBOW BLVD, 66160-7415  
 588-6670 1902790183  
 54 M 1902 80 AN

BERGANT MD, JAMES A, 155 S 18TH ST, 66102-0000  
 281-1313 0  
 43 M 1902 92 U

BERGIN MD, JAMES J, 51 N 12TH ST, 66102-5177  
 281-8767 2407540045  
 28 M 2407 76 IM

BERRIOS MD, CARLOS R, 155 S 18TH ST STE 214, 66102-0000  
 621-0101 0  
 56 M 17601 92 ORS

BOLING MD, J MARK, 8919 PARALLEL PKY #314, 66112-1655  
 299-6936 0  
 58 M 1902 0 P

BOLINGER MD, ROBERT E, 3901 RAINBOW BLVD, 66160-7376  
 588-6022 1902430110  
 19 M 1902 43 END

BOSILEVAC MD, FRED N, 155 S 18TH, 66102-5644  
 342-4843 1902440174  
 16 M 1902 44 OPH

BRACKETT JR MD, CHARLES E, 460 TERRACE TRAIL E, 66106-9505  
 0 3501440123  
 20 M 3501 52 OO

BRILLHART MD, MAXINE T, 4540 COUNTY LINE RD, 66106-3745  
 0 1902500096  
 15 F 1902 50 OO

BROOKS MD, WILLIAM HENRY, 155 S 18TH STE 101, 66102-5644  
 371-4343 1902742219  
 49 M 1902 78 R

CALDERON MD, JAIME, 21 N 12TH ST STE 300, 66102-0000  
 261-0101 26401660231  
 39 M 26401 75 CD

CALKINS MD, JOHN W, 3901 RAINBOW BLVD, 66160-7316  
 588-6236 1902760250  
 51 M 1902 76 OBG

CARPENTER MD, PAUL R, 155 S 18TH STE 290, 66102-5654  
 371-6800 1902500126  
 24 M 1902 50 GS

CHAFFEE MD, TERRY L, 3901 RAINBOW BLVD, 66160-7415  
 588-6670 1902790361  
 53 M 1902 0 AN

CHALIAN MD, ALEXANDER R, 2648 MINNESOTA, 66102-4024  
 0 3509370141  
 3 M 3509 57 OO

CHANG MD, C H JOSEPH, 3901 RAINBOW BLVD, 66160-7234  
 588-6807 58301530011  
 29 M 58301 71 R

CHAVES MD, ENRIQUE, 3901 RAINBOW BLVD, 66160-7330  
 588-6371 3901630118  
 36 M 3901 0 PDN

CHERNOFF MD, MARY A, 8929 PARALLEL PKY, 66112-1636  
 596-4100 1902831181  
 56 F 1902 84 AN

CHEUNG MD, LAURENCE Y, 3901 RAINBOW BLVD, 66160-7385  
 588-6101 38503680014  
 44 M 38503 91 GS

CHIN MD, TOM D, 3901 RAINBOW BLVD, 66160-7313  
 588-2772 2501460233  
 22 M 2501 73 ID

CHO MD, CHENG T, 3901 RAINBOW BLVD, 66160-7330  
 588-6336 38501620081  
 37 M 38501 74 PD

CHONKO MD, ARNOLD M, 3901 RAINBOW BLVD, 66160-7382  
 588-6076 3840690244  
 43 M 3840 74 NEP

CLAWSON MD, D KAY, 3901 RAINBOW BLVD, 66160-7100  
 588-1400 2401520239  
 27 M 2401 83 ORS

COALE MD, LLOYD H, 5020 GREELEY, 66104-3134  
 -0 1902430209  
 13 M 1902 43 OO

COVILLO D O, FREDERICK V, 21 N 12TH ST #200, 66102-5161  
 281-5656 2878780925  
 49 M 2878 0 GS

COX III MD, IRA L, 155 S 18TH STE 101, 66102-5644  
 371-4343 1902680183  
 43 M 1902 69 DR

CREDITOR MD, MORTON C, 3901 RAINBOW BLVD, 66160-7300  
588-1265 3501470171  
23 M 3501 86 IM

CULP MD, LOUIS M, 8919 PARALLEL PKY STE 208, 66112-1655  
334-6801 1902530211  
24 M 1902 53 FP

CUPPAGE MD, FRANCIS E, 3901 RAINBOW BLVD, 66160-7410  
588-7070 3840590312  
32 M 3840 68 PATH

DADKHAH MD, NADER, 1428 S 32ND, 66106-0000  
384-1630 1902870438  
57 M 1902 0 IM

DAHL MD, DAVID C, 51 N 12TH, 66102-5161  
281-8881 4101801646  
59 M 1645 90 EM

DAILY MD, DONNA K, 3901 RAINBOW BLVD, 66160-7330  
588-5900 0  
44 F 1902 78 PD

DANIELS MD, HERBERT A, 21 N 12TH ST #200, 66102-5161  
281-5500 4002750215  
46 M 4002 86 ENT

DAVIS MD, CHRISTOPHER G, 1006 N WASHINGTON BLVD, 66102-4047  
299-6075 1902390118  
9 M 1902 40 FP

DELCORE MD, ROMANO, 3901 RAINBOW BLVD, 66160-7308  
588-6183 1902810974  
57 M 1902 84 GS

DEMOTT MD, WAYNE R, 8929 PARALLEL PKY, 66112-1636  
596-4724 4002590102  
34 M 4002 68 PATH

DUJOVNE MD, CARLOS A, 3901 RAINBOW BLVD, 66160-7320  
588-6061 13201610405  
37 M 13201 73 PA

DULIN MD, JOSE I, 6013 LEAVENWORTH RD, 66104-1498  
299-0089 84711750061  
51 M 84711 81 IM

DUNN MD, MARVIN I, 3901 RAINBOW BLVD, 66160-7378  
588-6015 1902540241  
27 M 1902 54 CD

EMAMI MD, ABBAS, 3901 RAINBOW BLVD, 66160-7330  
588-6340 51703710135  
45 M 51703 0 PD

EMORY MD, JEFF, 51 N 12TH, 66102-5177  
281-8881 0  
60 M 2846 91 EM

ERENBERG MD, ALLEN, 3901 RAINBOW BLVD, 66160-7330  
588-6339 1611670415  
43 M 1611 0 PD

ESTES MD, NORMAN C, 3901 RAINBOW BLVD, 66160-7308  
588-6150 1902710350  
40 M 1902 84 GS

FLOREZ MD, JAMES P, 6013 LEAVENWORTH RD, 66104-1498  
299-2069 0  
45 M 1902 0 PUD

FORET MD, JOHN D, 3901 RAINBOW BLVD, 66160-7390  
588-6148 1602530228  
26 M 1602 59 U

FORSTER MD, JAMESON, 3901 RAINBOW BLVD, 66160-7308  
588-6183 4101801646  
52 M 4101 89 GS

FOX MD, DEANNA K, 3901 RAINBOW BLVD, 66160-7415  
588-6670 1902741531  
48 F 1902 76 AN

FRANCISCO MD, W DAVID, 3901 RAINBOW BLVD, 66160-0001  
588-6129 1902440531  
21 M 1902 44 ORS

GILHOUSEN MD, FREDERIC M, 8919 PARALLEL PKY STE 270, 66112-1655  
788-7111 1902660336  
40 M 1902 67 ORS

GOLLUB MD, STEVEN B, 3901 RAINBOW BLVD, 66160-7378  
588-6015 1205780404  
53 M 1205 80 CD

GOTO MD, HIROSHI, 3901 RAINBOW BLVD, 66160-7415  
588-6670 57241670025  
42 M 57241 76 AN

GRANTHAM MD, JARED J, 3901 RAINBOW BLVD, 66160-7382  
588-6074 1902620300  
36 M 1902 69 NEP

GREENBERGER MD, N J, 3901 RAINBOW BLVD, 66160-7350  
588-6001 3806590249  
33 M 3806 72 IM

GREENE MD, LAWRENCE S, 6013 LEAVENWORTH RD, 66104-1498  
299-0089 3506540231  
33 M 3506 81 GE

GRUENDEL MD, RICHARD A, 6926 GARFIELD AVE, 66102-0000  
0 1902550441  
29 M 1902 55 OO

GRUENDEL MD, VIRGINIA T, 6926 GARFIELD AVE, 66102-0000  
0 1902550450  
30 F 1902 55 OO

HANCOCK MD, ALAN C, 9201 PARALLEL, 66112-1549  
299-1474 1902640343  
35 M 1902 65 FP

HARA MD, GLENN S, 3901 RAINBOW BLVD, 66160-7316  
588-6241 514690278  
43 M 514 73 OBG

HART MD, KELLY Z, 155 S 18TH STE 101, 66102-5644  
371-4343 1902752133  
50 M 1902 76 DR

HARWOOD MD, MICHAEL R, 8919 PARALLEL PKY STE 206, 66112-1655  
788-7099 1611811311  
55 M 1611 87 IM

HENDRICKS MD, K DWIGHT, 8919 PARALLEL PKY STE 226, 66112-1655  
299-8800 1611791212  
53 M 1611 80 OPH

HERMRECK MD, ARLO S, 3901 RAINBOW BLVD, 66160-7308  
588-7232 1902650390  
38 M 1902 66 GS

HIEBERT MD, JOHN M, 3901 RAINBOW BLVD, 66160-7389  
588-6143 2405670341  
42 M 2405 80 PS

HILD MD, PETER G, 3901 RAINBOW BLVD, 66160-7415  
588-6670 4802830772  
57 M 4802 89 AN

HINTHORN MD, DANIEL R, 3901 RAINBOW BLVD, 66160-7354  
588-3974 1902670404  
41 M 1902 68 ID

HOADLEY MD, WILLIAM D, 3901 RAINBOW BLVD, 66160-7377  
588-3974 1902560536  
31 M 1902 56 IM

HOLDCRAFT MD, JACQUELYNE, 155 S 18TH #160, 66102-5644  
321-1161 2105630487  
36 F 2105 68 ENT

HOLLADAY MD, FRANK P, 8919 PARALLEL PKY STE 331, 66112-1655  
299-9507 3006801250  
53 M 64914 88 NS

HOLMES MD, FREDERICK F, 3901 RAINBOW BLVD, 66160-7350  
588-6005 5404570350  
32 M 5404 69 IM

HOLMES MD, GRACE E, 3901 RAINBOW BLVD, 66160-7330  
588-2773 5404570368  
32 F 5404 68 PD

HOOVER MD, LARRY A, 3901 RAINBOW BLVD, 66160-7380  
588-6720 3840710512  
44 M 3840 90 OTO

HUERTER MD, QUENTIN C, 8919 PARALLEL PKY STE 226, 66112-1655  
299-8800 1902590401  
31 M 1902 60 OPH



HUESTON MD, ALLEN L, 155 S 18TH ST, 66102-0000

321-1133	0			
50	M	1803	0	P

HULL MD, LUELLEN, 8919 PARALLEL PKY #322, 66112-1655

788-9797	0			
60	F	2803	91	OBG

HUTCHISON MD, MICHAEL C, 3901 RAINBOW BLVD, 66160-7415

588-6670	1902780854			
53	M	1902	80	AN

IBARRA MD, RICHARD C, 754 PACIFIC, 66101-3714

0	64902570258			
26	M	64902	63	OO

ILIOPOULOS MD, JOHN I, 3901 RAINBOW BLVD, 66160-7308

588-6197	41801690341			
44	M	41801	81	GS

INGRAM MD, JOHN E, 1428 S 32ND, 66106-2160

384-1630	3006560317			
24	M	3006	57	FP

JACOBS MD, DAVID S, 8929 PARALLEL PKY, 66112-3607

596-4725	2501560785			
31	M	2501	65	PATH

JAHANIAN MD, DARYOUSH, 8919 PARALLEL PKY #304, 66112-1655

334-5420	51701640318			
40	M	51701	74	OBG

JAYARAM MD, MARANDAPALLI R, 8919 PARALLEL PKY STE 416, 66112-1655

299-8000	49509650135			
42	M	49509	73	PD

JETER MD, JOHN, 3901 RAINBOW BLVD, 66160-0000

588-6504	1902810435			
55	M	1902	82	EM

JEWELL MD, WILLIAM R, 3901 RAINBOW BLVD, 66160-7308

588-6112	1611610838			
35	M	1611	72	GS

JOHNSON MD, DAVID B, 4601 ORVILLE #5, 66102-3607

596-1313	2002790672			
54	M	2002	0	FP

JOHNSON MD, JOHN E, 51 N 12TH, 66102-5161

281-8814	4706430453			
17	M	4706	57	PATH

JOHNSON-GIANNOPOULOS MD, NADINE, 8919 PARALLEL PKY STE 325,

66112-1655				
299-8846	1803630565			
38	F	1803	0	IM

KALIVAS MD, JAMES, 3901 RAINBOW BLVD, 66160-7319

588-6028	502630423			
38	M	502	70	D

KERBY MD, GERALD R, 3901 RAINBOW BLVD, 66160-7381

588-6044	1902580499			
32	M	1902	62	PUD

KHARE MD, PRATIBHA, 8929 PARALLEL PKY, 66112-1636

596-4100	49547710028			
47	F	0	78	AN

KIM MD, JONG M, 3901 RAINBOW BLVD, 66160-7415

588-6670	58303640221			
40	M	58302	74	AN

KINDSCHER MD, JAMES D, 3901 RAINBOW BLVD, 66160-7415

588-6670	1902820945			
55	M	1902	83	AN

KOVAC MD, ANTHONY L, 3901 RAINBOW BLVD, 66160-7415

588-6670	1902770816			
52	M	1902	81	AN

KRAMER MD, GARY M, 155 S 18TH ST, 66102-0000

621-0101	1601851420			
57	M	1601	0	ORS

KRANTZ MD, KERMIT E, 3901 RAINBOW BLVD, 66160-7316

588-6201	1606480799			
23	M	1606	59	OBG

KUMMER MD, ANTHONY J, 3901 RAINBOW BLVD, 66160-7376

588-3974	0			
61	M	1902	88	IM

KWEE MD, SIOE T, 8929 PARALLEL PKY, 66112-1636

596-4723	1720630750			
36	F	1720	70	PATH

KYNER MD, JOSEPH L, 3901 RAINBOW BLVD, 66160-7318

588-6048	1902600384			
34	M	1902	61	IM

LAING MD, ROBERT R, 155 S 18TH STE 275, 66102-5644

621-1000	1643610431			
37	M	1643	62	GE

LAMBERT MD, KENNETH J, 1217 N 5TH ST, 66101-0000

342-4211	0			
59	M	401	92	OBG

LAWWILL MD, THEODORE, 3901 RAINBOW BLVD, 66160-7303

588-6605	4705610296			
37	M	4705	80	OPH

LEE MD, JAE M, 155 S 18TH #290, 66102-5654

371-6800	58302650118			
40	M	58302	74	GS

LEE MD, KYO R, 3901 RAINBOW BLVD, 66160-7234

588-6800	58302590107			
33	M	58302	73	R

LEVINE MD, ERROL, 3901 RAINBOW BLVD, 66160-7234

588-6800	83601640191			
41	M	83601	77	DR

LEVINE MD, JOSEPH M, 3901 RAINBOW BLVD, 66160-7415

588-6670	1902861056			
60	M	1902	90	AN

LIEBERMAN MD, BRUCE IRWIN, 3901 RAINBOW BLVD, 66160-7330

588-5919	3843740218			
49	M	3819	79	PD

LINDSLEY MD, CAROL B, 3901 RAINBOW BLVD, 66160-7330

588-6325	5404680848			
41	F	5404	74	PD

LINDSLEY MD, HERBERT B, 3901 RAINBOW BLVD, 66160-7317

588-6009	1902660611			
40	M	1902	74	RHU

LIU MD, ALBERT T, 8919 PARALLEL PKY STE 322, 66112-1655

788-9797	1902791171			
49	M	1902	80	OBG

LIU MD, CHIEN, 3901 RAINBOW BLVD, 66160-7354

588-6035	24217470036			
21	M	24217	59	ID

LUDWIG MD, LEE V, 155 S 18TH STE 290, 66102-5644

371-6800	1902810907			
54	M	1902	91	GS

LUKERT MD, BARBARA P, 3901 RAINBOW BLVD, 66160-7318

588-6048	1902600422			
34	F	1902	61	END

MACDOUGALL MD, MARGARET L, 3901 RAINBOW BLVD, 66160-7382

588-6074	1902771723			
48	F	1902	82	NEP

MANI MD, MANI M, 3901 RAINBOW BLVD, 66160-7389

588-6142	49527590131			
37	M	49527	74	PS

MARTIN MD, JOSEPH P, 8919 PARALLEL PKY STE 206, 66112-1655

334-1515	1902742294			
49	M	1902	78	IM

MARTIN MD, NORMAN L, 3901 RAINBOW BLVD, 66160-7234

588-6800	1902620512			
36	M	1902	63	DR

MATHEWSON MD, HUGH S, 3901 RAINBOW BLVD, 66160-7415

588-3341	1902440964			
21	M	1902	44	AN

MATTIOLI MD, LEONE, 3901 RAINBOW BLVD, 66160-7330

588-6311	56115560013			
32	M	56115	69	PDC

MCCARTHY MD, ROBERT P, 8919 PARALLEL STE 231, 66112-1655  
334-9003 2834530719  
25 M 2834 54 U

MCCULLOCH MD, DAWNA L, 51 N 12TH, 66102-5161  
281-8881 0  
63 F 2846 90 EM

MCLEAN MD, THOMAS R, 21 N 12TH ST #200, 66102-5161  
281-0033 0  
56 M 1602 92 CDTs

MEBUST MD, WINSTON K, 3901 RAINBOW BLVD, 66160-7390  
588-6146 5404580398  
33 M 5404 66 U

MILLER MD, DENNIS W, 600 NEBRASKA STE 102, 66101-2219  
621-4001 4707750583  
49 M 4707 82 OBG

MILLIGAN MD, DONALD B, 3901 RAINBOW BLVD, 66160-0001  
588-1937 2307740632  
48 M 2307 75 FP

MOELLER MD, DONALD D, 4631 ORVILLE AVE #111, 66102-3647  
371-4301 1902600546  
34 M 1902 61 GE

MOLOS MD, MARK A, 8919 PARALLEL PKY STE 206, 66112-1655  
788-7099 2846810415  
57 M 2846 88 IM

MOORE MD, WAYNE V, 3901 RAINBOW BLVD, 66160-7330  
588-6326 2604701786  
42 M 2604 74 PD

MORFFI MD, RAUL R, 8919 PARALLEL PKY STE 206, 66112-1655  
788-7099 27501510799  
25 M 27501 67 IM

MUNNS MD, STEPHEN W, 3901 RAINBOW BLVD, 66160-7387  
588-6133 1803791186  
53 M 1803 0 ORS

MURRAY MD, JANE L, 3901 RAINBOW BLVD, 66160-7370  
588-1900 514771014  
51 F 514 86 FP

NELSON MD, JOHN B, 8919 PARALLEL PKY STE 203, 66112-1655  
788-5800 2846750188  
48 M 2846 78 PUD

NIBBELINK MD, LARRY W, 8919 PARALLEL PKY STE 440, 66112-1655  
299-2229 2846750196  
48 M 2803 79 OBG

NOBLE MD, MARK J, 3901 RAINBOW BLVD, 66160-7390  
588-6148 2501751459  
49 M 2501 81 U

NORRIS MD, CHARLEY W, 3901 RAINBOW BLVD, 66160-7380  
588-6700 1902640688  
33 M 1902 65 OTO

O'BOYNICK II MD, PAUL LEONARD, 3901 RAINBOW BLVD", 66160-7383, 588-  
6118 1902730822  
48 M 1902 79 NS

OLNEY MD, BRAD W, 3901 RAINBOW BLVD, 66160-7387  
588-6138 1902810605  
54 M 1902 91 ORS

OLSON MD, NANCY Y, 3901 RAINBOW BLVD, 66160-7330  
588-6325 2846820801  
58 F 2846 0 A

PALAZZOLO MD, MICHAEL J, 3901 RAINBOW BLVD, 66160-7330  
588-5919 0  
59 M 2834 91 PD

PARDO MD, LILLIAN G, 3901 RAINBOW BLVD, 66160-7330  
588-6371 74802620903  
39 F 74802 79 PDN

PARDO MD, MANUEL P, 3901 RAINBOW BLVD, 66160-7341  
588-6464 74801623291  
35 M 74801 73 P

PAREKH MD, AJITKUMAR M, 6013 LEAVENWORTH RD, 66104-1498  
299-2069 49501710091  
47 M 49501 77 PUD

PARRA MD, DANIEL C, 6013 LEAVENWORTH RD, 66104-1498  
299-2069 84703750108  
43 M 84703 83 FP

PARRA MD, MIGUEL D, 6013 LEAVENWORTH RD, 66104-1498  
299-2088 84710640245  
37 M 84710 70 FP

PARRISH MD, STEVEN, 51 N 12TH, 66102-0000  
281-8881 5104871137  
61 M 5104 89 EM

PERRY JR MD, LAWRENCE L, 3901 RAINBOW BLVD, 66160-7370  
588-1908 1902590699  
34 M 1902 73 FP

PIERCE MD, GEORGE E, 3901 RAINBOW BLVD, 66160-7373  
588-6128 2307600466  
33 M 2307 72 TS

PORTER MD, DAVID M, 4517 TROUP, 66102-0000  
287-8800 4707640508  
39 M 4707 69 PD

POTTER MD, ROBERT L, 155 S 18TH ST #275, 66102-5654  
621-1000 1902640726  
38 M 1902 64 IM

POWERS MD, G ROBERT, 8919 PARALLEL PKY STE 416, 66112-1655  
299-8000 1902650705  
33 M 1902 67 FP

PREMSINGH MD, NALINI G, 1601 MEADOWLARK LN #A, 66102-1284  
596-2000 49527670020  
39 F 49508 76 CD

PRESTON MD, DAVID F, 3901 RAINBOW BLVD, 66160-7234  
588-6810 3841590588  
33 M 3841 74 NM

PRETZ MD, JAMES B, 1300 N 81ST ST, 66112-2109  
0 1902470481  
24 M 1902 47 OO

PRICE MD, JAMES G, 3901 RAINBOW BLVD, 66160-7300  
588-5287 702510481  
26 M 702 78 FP

PRIETO MD, JORGE N, 6013 LEAVENWORTH RD, 66104-1498  
299-2069 26401690068  
45 M 26401 76 GS

PUGH MD, DAVID M, 3901 RAINBOW BLVD, 66160-7378  
588-6015 801580530  
29 M 801 64 CD

QUINN MD, CHARLES E, 4601 ORVILLE STE 15, 66102-3607  
287-6604 4707680500  
43 M 4707 75 OBG

RALSTIN MD, JAMES H, 6013 LEAVENWORTH RD, 66104-1498  
299-2069 1902742341  
49 M 1902 78 IM

RECKLING MD, FREDERICK W, 3901 RAINBOW BLVD, 66160-7387  
588-6129 3545590475  
34 M 3545 66 ORS

REDMON DO, MARY L, 3901 RAINBOW BLVD, 66160-7370  
588-1908 2878830370  
44 F 2878 0 FP

REEB MD, RONALD JOSEPH, 155 S 18TH, 66102-5644  
371-4343 3006720870  
46 M 3006 79 DR

RHODES MD, JAMES B, 3901 RAINBOW BLVD, 66160-7350  
588-6019 1902580766  
28 M 1902 66 GE

RIDGWAY MD, LOUIS E, 3901 RAINBOW BLVD, 66160-7316  
588-6250 0  
58 M 2101 92 OBG

ROBINSON MD, RALPH G, 3901 RAINBOW BLVD, 66160-7234  
588-6805 1902620768  
37 M 1902 63 NM

ROGERS MD, BECKY J, 3901 RAINBOW BLVD, 66160-7358  
588-6337 1902771600  
52 F 1902 0 NPM



ROOK MD, LEE E, 1111 S 55TH, 66106-0000

0	1902380490			
9	M	1902	38	OO

ROSENTHAL MD, HOWARD G, 3901 RAINBOW BLVD, 66160-7387

588-6198	0			
59	M	301	91	ORS

ROSENTHAL MD, STANTON J, 3901 RAINBOW BLVD, 66160-0001

588-6800	1902710953			
46	M	1902	72	DR

ROTH MD, ALAN E, 51 N 12TH ST, 66102-5161

281-8815	1902620776			
35	M	1902	63	PATH

RUBLE MD, REBECCA A, 3901 RAINBOW BLVD, 66160-7370

588-1908	1902821666			
56	F	1902	90	FP

SCHIMKE MD, R NEIL, 3901 RAINBOW BLVD, 66160-7318

588-6043	1902620806			
35	M	1902	63	IM

SCHLOERB MD, PAUL R, 3901 RAINBOW BLVD, 66160-7308

588-7565	3545440465			
19	M	3545	55	GS

SCHROEDER MD, JOEL, 51 N 12TH, 66102-0000

281-8881	0			
64	M	2846	0	EM

SCHWEGLER MD, RAYMOND A, 8919 PARALLEL PKY STE 416, 66112-1655

299-8000	1902630747			
37	M	1902	64	CD

SCHWORM MD, CURTIS P, 155 SOUTH 18TH STE 101, 66102-5644

371-4343	3005730863			
47	M	3005	77	DR

SHAW MD, PAMELA K, 3901 RAINBOW BLVD, 66160-7330

588-5919	1902861544			
60	F	1902	89	PD

SHIREMAN MD, PETER K, 8929 PARALLEL PKY, 66112-1636

596-4722	2846830629			
58	M	1902	87	PATH

SMITH MD, MARGARET L, 3901 RAINBOW BLVD, 66160-7370

588-1908	2834831328			
55	F	2834	84	FP

SNYDER MD, THOMAS E, 3901 RAINBOW BLVD, 66160-7316

588-6243	1902731098			
47	M	1902	82	OBG

SOUCEK MD, CHARLES D, 155 S 18TH STE 101, 66102-5644

371-4343	3005560682			
31	M	3005	64	R

SPEER MD, LELAND, 910 N WASHINGTON BLVD, 66102-4045

0	1902360511			
12	M	1902	36	OO

SPIEKER MD, JOHN B, 3901 RAINBOW BLVD, 66160-7415

588-6670	4802861635			
57	M	4802	90	AN

STECHSCHULTE MD, DANIEL J, 3901 RAINBOW BLVD, 66160-7317

588-6008	2834620921			
36	M	2834	73	A

STEELE MD, CLARENCE H, 8009 NEBRASKA, 66112-2138

0	1902400474			
14	M	1902	40	OO

STEER MD, PHYLLIS L, 3901 RAINBOW BLVD, 66160-7415

588-6670	1902851778			
57	F	1902	89	AN

STEWART MD, DANIEL L, 3901 RAINBOW BLVD, 66160-7316

588-6222	1902871663			
61	M	1902	0	OBG

STUBBLEFIELD MD, CHARLES T, 8919 PARALLEL PKY STE 440, 66112-1655

299-2229	1902580936			
32	M	1902	59	OBG

THEROU MD, LEONA F, 3901 RAINBOW BLVD, 66160-7330

588-5908	6701670190			
41	F	6701	71	PD

THOMAS MD, JAMES H, 3901 RAINBOW BLVD, 66160-7308

588-6115	2012660629			
41	M	2012	75	GS

THOMAS MD, THOMAS V, 21 N 12TH ST #200, 66102-5161

371-7676	49549610021			
37	M	49549	72	GS

THOMPSON MD, DANNIE M, 21 N 12TH ST STE 400, 66102-5161

321-3355	4707640583			
35	M	4707	68	OBG

TICKLES MD, DEBRA F, 8919 PARALLEL PKY STE 326, 66112-1655

299-8300	1902841829			
56	F	1902	89	PD

TIOJANCO MD, REYNALDO R, 6013 LEAVENWORTH RD, 66104-1498

299-2069	74801652437			
44	M	0	65	FP

TOBY MD, EDWARD B, 3901 RAINBOW BLVD, 66160-7387

588-6134	1720812688			
55	M	1720	91	ORS

TORLINE MD, RONALD L, 3901 RAINBOW BLVD, 66160-7415

588-6670	1902841837			
58	M	1902	85	AN

TRUEWORTHY MD, ROBERT C, 3901 RAINBOW BLVD, 66160-7330

588-6340	2802660742			
40	M	2802	73	PD

TUCKER MD, VIRGINIA L, 3901 RAINBOW BLVD, 66160-7330

588-5908	1902570965			
30	F	1902	57	PD

UNRUH MD, GREGORY K, 3901 RAINBOW BLVD, 66160-7415

588-6670	1902810923			
55	M	1902	82	AN

VATS MD, TRIBHAWAN S, 3901 RAINBOW BLVD, 66160-7330

588-6340	49529630033			
40	M	49529	75	PD

WAXMAN MD, STEVE W, 3901 RAINBOW BLVD, 66160-0000

588-6146	0			
60	M	1902	93	U

WAXMAN MD, STEVE W, 3901 RAINBOW BLVD, 66160-7390

588-6146	1902861871			
60	M	1902	0	GS

WEATHERSTONE MD, KATHLEEN B, 3901 RAINBOW BLVD, 66160-7330

588-6337	1902831904			
54	F	1902	90	PD

WEED MD, JOHN C, 3901 RAINBOW BLVD, 66160-7316

588-6244	2101681231			
43	M	2101	86	GYN

WEIGEL MD, JOHN W, 3901 RAINBOW BLVD, 66160-7390

588-6147	1902540977			
29	M	1902	54	U

WIBLE MD, KENNETH L, 3901 RAINBOW BLVD, 66160-7330

588-5908	4102691691			
43	M	4102	87	PD

WILKINSON MD, STEVEN B, 3901 RAINBOW BLVD, 66160-7383

588-6107	0			
60	M	2846	92	N

WISE MD, JOSEPH E, 8919 PARALLEL PKY STE 326, 66112-1655

299-8300	1902761582			
51	M	1902	0	PD

WOLF MD, KARL T, 621 NORTHRUP, 66101-3301

0	1902480541			
14	M	1902	48	OO

ZINN MD, THOMAS W, 155 S 18TH STE 101, 66102-5644

371-4343	1902671001			
41	M	1902	68	R

## KANSAS CITY, MO — 816

AHMED MD, IFTEKHAR, 2900 BALTIMORE #390, 64108-3407

756-2651	89519740019			
45	M	0	0	N

BRUMMETT MD, RICHARD R, 2300 MAIN ST STE #1090, 64108-2415  
 221-0222 1902640084  
 34 M 1902 65 FP

CHRISTENSEN MD, SHANE R, 4822 RIDGEWAY CT, 64133-2451  
 281-8881 2846790074  
 55 M 1902 83 EM

CULLAN MD, SAMUEL K, 5600 NE ANTIOCH RD, 64119-2377  
 861-7600 0  
 54 M 3006 0

DAVIS MD, RICHARD E, 1010 W 56TH, 64113-1113  
 0 1902540209  
 26 M 1902 54 OO

DEVINS MD, GEORGE S, 6700 TROOST #520, 64131-4401  
 0 0  
 36 M 1902 62 IM

GODFREY MD, WILLIAM A, 4320 WORNALL 714, 64111-3210  
 561-2289 1902650284  
 38 M 1902 66 OPH

GRAHAM MD, J ROBERT, 8880 WARD PKWY, 64114-2756  
 333-9700 1902701342  
 43 M 1902 0 FP

HARD MD, BENJAMIN F, 8400 HAWTHORN RD, 64120-2301  
 242-2525 4802550664  
 28 M 4802 64 OM

HATHAWAY MD, PETER, 1010 CARONDELET DR #220, 64114-4822  
 941-2121 3503600195  
 31 M 3503 74 IM

HOPKINS MD, JAMES P, 6650 TROOST STE 208, 64131-1249  
 523-7811 0  
 22 M 2407 85

HUNKELER MD, JOHN D, 4321 WASHINGTON ST #6000, 64111-5900  
 0 0  
 41 M 1902 85 OPH

KAHN JR MD, NORMAN B, 8880 WARD PKY, 64114-0000  
 333-9700 0  
 47 M 1902 91 FP

KEPES MD, JOHN J, 6612 BROOKLYN, 64132-0000  
 0 47301520146  
 28 M 47301 62 OO

KESSLER D O, ALAN, 426 W 109TH ST, 64114-0000  
 268-9211 0  
 63 M 2878 92 GP

KINDRED MD, LYNN H, 4320 WORNALL RD STE 40-II, 64111-3210  
 531-5510 0  
 37 M 1902 0 CD

KINPORTS SR MD, EDWARD B, PO BOX 1823, 64141-0000  
 0 1602420309  
 15 M 1602 77 OO

KLEMM MD, J MARTIN, 4320 WORNALL RD #702, 64111-3210  
 561-2524 1902780943  
 53 M 1902 80 P

MATHEWS MD, DAVID R, HBC #3 PO BOX 9627, 64134-0627  
 966-5011 1902781150  
 53 M 1902 80 FP

MURRAY MD, W LEE, 7701 STATE LINE, 64114-0000  
 599-2888 1902610614  
 35 M 1902 78 OPH

PAYNE MD, J RALPH, 4460 ROCKHILL TER, 64110-1541  
 596-4180 1902660808  
 40 M 1902 67 EM

REIVICH MD, RONALD S, 1000 E 50TH ST #270, 64110-2215  
 822-0297 3806600601  
 34 M 3806 66 P

RISING MD, JESSE D, 10000 WORNALL RD #2107, 64114-4363  
 588-1934 1902380481  
 14 M 1902 38 IM

SCHLOZMAN MD, DANIEL L, 6420 PROSPECT STE T303, 64132-1188  
 333-1919 0  
 38 M 1902 0 PM

THALBLUM MD, HARVEY, 6400 PROSPECT STE 310, 64132-1179  
 523-2400 0  
 39 M 1103 0 R

UTLEY MD, JAMES HARMON, 4951 WESTWOOD TER, 64112-1159  
 281-8881 1606741941  
 51 M 1606 77 EM

WOLFF MD, FREDERICK P, 10000 WORNALL RD #1117, 64114-4361  
 0 1902441600  
 20 M 1902 44 OO

WOLKOFF MD, A STARK, 11242 OAK ST, 64114-5411  
 0 4109500718  
 21 M 4109 65 OO

YOST JR MD, JOHN G, 6420 PROSPECT STE T207, 64132-1187  
 444-9000 0  
 53 M 3005 0 ORS

ZARR MD, JAMES S, 6675 HOLMES ST #410, 64131-1167  
 276-7035 2803811108  
 55 M 2803 86 PM

### KINGMAN — 316 (*Ninnescah Medical Society*)

BOYER MD, ROBERT E, PO BOX 273, 67068-0273  
 532-5145 1902620059  
 36 M 1902 63 FP

BURKET JR MD, GEORGE E, RR 1 BOX 159A, 67068-9652  
 0 1902370125  
 12 M 1902 37 OO

### KINSLEY — 316 (*Iroquois County Medical Society*)

ATWOOD MD, M DALE, 409 ELIZABETH AVE, 67547-1243  
 0 1902510032  
 19 M 1902 51 OO

SCHNOEBELEN MD, RENE E, 416 E 4TH, 67547-1212  
 659-2141 3901400384  
 16 M 3901 46 FP

### LA CROSSE — 913 (*Barton County Medical Society*)

BHARGAVA MD, ASHOK KUMAR, PO BOX 490, 67548-0490  
 222-2564 49547640119  
 37 M 49547 78 FP

SUWANABHAND MD, CHALAW, PO BOX 490, 67548-0490  
 222-2564 0  
 32 M 89101 74 FP

### LAKIN — 316 (*Southwest Kansas Medical Society*)

WAMSLEY MD, CRAIG A, 506 THORPE BOX 744, 67860-9604  
 355-7550 1902872104  
 58 M 1902 0 FP

### LANSING — 913 (*Leavenworth County Medical Society*)

BYRD D O, CHARLES W, 617 N MAIN, 66043-1371  
 727-2300 0  
 57 M 2878 92 IM



GRAHAM MD, KENNETH L, 1517 W EISENHOWER RD, 66043-0000  
 0 3840450243  
 21 M 3840 48 OO

JONES MD, JANA D, 617 N MAIN, 66043-1371  
 727-2300 1902890862  
 62 F 1902 92 IM

### LARNED — 316 (Barton County Medical Society)

COOK MD, KAROLYN M, 923 CARROLL, 67550-2426  
 285-6958 0  
 61 F 1902 90 FP

COOK MD, THEODORE R, 804 CARROLL, 67550-2426  
 285-6958 1902870411  
 61 M 1902 90 FP

CRAM JR MD, OLE R, 915 W 6TH, 67550-2827  
 0 1902430233  
 18 M 1902 43 OO

JONES MD, DAVID B, PO BOX 68, 67550-0068  
 285-3133 1902840962  
 58 M 1902 87 GP

SHAH MD, MIAN, SHAH CLINIC PO BOX 30, 67550-0030  
 285-3173 16002580032  
 32 M 70403 76 GS

SHAH MD, NASREEN, SHAH CLINIC PO BOX 30, 67550-0030  
 285-3173 70409620068  
 39 F 70409 76 OBG

### LAWRENCE — 913 (Douglas County Medical Society)

BAILEY MD, WILLIAM A, PO BOX 1898, 66044-8898  
 843-9125 1902660051  
 40 M 1902 67 ORS

BEACH MD, RICHARD R, 324 WOODLAWN DR, 66049-1838  
 0 2802480043  
 23 M 2802 54 OO

BELOT JR MD, MONTI L, 647 MASSACHUSETTS ST STE 201, 66044-2292  
 843-3640 1902400032  
 13 M 1902 40 FP

BISHOP MD, RODNEY LEE, 3310 CLINTON PARKWAY CT, 66047-2632  
 842-7200 1902751625  
 49 M 1902 75 IM

BOYDEN MD, MARY S, 4004 TRAIL RD, 66049-4112  
 842-3778 2604390144  
 14 F 2604 42 PDA

BRANSON MD, VERNON L, 346 MAINE ST, 66044-1394  
 842-4477 1902420076  
 17 M 1902 42 PD

BRUNFELDT MD, JOAN KRAUS, 404 MAINE ST, 66044-1397  
 842-3635 1902770204  
 52 F 1902 78 IM

BUCK JR MD, HENRY W, WATKINS MEM HOSP, 66045-0001  
 864-9500 1902600121  
 34 M 1902 61 OBG

BURGESS MD, ARTHUR P, PO BOX 826, 66044-0826  
 0 1902520101  
 19 M 1902 52 OO

CARNAHAN MD, ROBERT L, 1112 W 6TH, 66044-2215  
 841-4310 1902700109  
 42 M 1902 0 IM

CHEDIAK MD, ELIAS, 601 MISSOURI ST, 66044-2361  
 841-7430 84704650344  
 39 M 84704 71 P

CISKEY MD, WILLIAM J, 1625 W 19TH ST, 66046-2615  
 749-4668 1902730253  
 47 M 1902 74 FP

CULVER MD, WARREN T, 3506 W 10TH ST, 66049-3225  
 0 3508460251  
 20 M 3508 67 OO

DENNING MD, DALE P, 346 MAINE ST, 66044-1394  
 842-6644 1902820422  
 56 M 1902 83 IM

DENNING MD, PATRICIA M, WATKINS HLTH CENTER, 66045-0001  
 864-8500 1902821208  
 56 F 1902 83 IM

DILLON MD, STEVEN C, 3310 CLINTON PARKWAY CT, 66047-2632  
 842-7200 1902780510  
 53 M 1902 82 IM

DINSDALE MD, ROBERT C, 1112 W 6TH ST STE 216, 66044-2249  
 841-1107 4812840415  
 58 M 4812 90 OTO

DUNLAP MD, RICHARD L, 711 SUNSET DR, 66044-2435  
 842-4344 3005370247  
 12 M 3005 38 EENT

FLOERSCH MD, HUBERT M, 1915 QUAIL RUN, 66047-3526  
 0 1902350124  
 8 M 1902 35 OO

FORTIN MD, DAVID, 1112 W 6TH ST #108, 66044-2249  
 841-3211 1902700397  
 44 M 1902 0 R

FRIESEN MD, DALE, 1112 W 6TH ST STE 110, 66044-0000  
 842-7026 1902740305  
 47 M 1902 75 AN

FULBRIGHT MD, THOMAS W, 1112 W 6TH ST STE 210, 66044-2249  
 865-5995 1902850542  
 56 M 1902 90 FP

GILLES MD, HELEN M, 1301 IOWA ST, 66044-2161  
 0 1902450277  
 22 F 1902 45 OO

GODWIN MD, PHILLIP A, 500 ROCKLEDGE, 66049-2561  
 841-6540 1902550425  
 28 M 1902 55 AN

HAGGAN MD, MARGARET E, 1746 N H ST, 66044-4252  
 0 2501420355  
 0 F 2501 69 OO

HASSELLE III MD, JAMES E, 346 MAINE ST, 66044-1394  
 841-1243 4706590621  
 35 M 4706 69 P

HATTON MD, DONALD W, 404 MAINE ST STE 3, 66044-1397  
 842-3635 1902680353  
 42 M 1902 69 IM

HIEBERT MD, DAVID L, 1112 W 6TH ST, 66044-2215  
 841-3211 1902610371  
 36 M 1902 62 R

HIEBERT MD, JOHN B, 404 MAINE ST, 66044-1397  
 841-3636 1902680370  
 40 M 1902 72 CD

HOFFMAN MD, J PHILIP, 404 MAINE ST, 66044-1397  
 842-3635 1902780811  
 53 M 1902 0 IM

HOFFMANN MD, MARY A, 543 LAWRENCE AVE STE D, 66049-4217  
 799-2994 2846780311  
 54 F 2846 80 ORS

HUGHES MD, ROBERT W, 346 MAINE, 66044-1394  
 843-1374 1902540489  
 27 M 1902 54 FP

INGHAM JR MD, H LAIRD, 404 MAINE STE 3, 66044-1397  
 842-3635 3901700540  
 45 M 3901 73 IM

JONES MD, H PENFIELD, 346 MAINE, 66044-1394  
 0 2401310650  
 6 M 2401 33 GS

JOSEPH MD, HOWARD F, 805 SUNSET DR, 66044-2433  
 0 1902510377  
 26 M 1902 51 OO

KENNEDY MD, L ELAINE, 404 MAINE, 66044-1397  
842-3635 1902820929  
55 F 1902 0 IM

LANGE MD, MARY P, 346 MAINE, 66044-1394  
832-2020 2846850701  
61 F 2846 89 OPH

LANGE MD, MICHAEL, 1112 W 6TH STE 110, 66044-2249  
842-7026 1902851034  
59 M 1902 0 AN

LEARNED MD, GEORGE R, 401 ARKANSAS, 66044-1338  
843-5502 1902550701  
22 M 1902 56 GS

LOVELAND MD, G CHARLES, 346 MAINE, 66044-1394  
842-4477 1902730695  
47 M 1902 74 PD

MADSEN MD, GLENN L, 1112 W 6TH, 66044-2215  
841-3211 3005650479  
38 M 3005 68 R

MANAHAN MD, G EUGENE, 2129 TERRACE RD, 66049-2736  
0 1902440913  
19 M 1902 44 OO

MCGINNESS MD, MARILEE K, 1112 W 6TH STE 204, 66044-2249  
843-2010 3905820116  
54 F 3905 88 GS

MODDRELL MD, CAROL A, 325 MAINE, 66044-1360  
749-6100 1902710023  
45 F 1902 72 PATH

MYRICK MD, STEPHEN W, 346 MAINE, 66044-1394  
842-6644 1902771049  
52 M 1902 78 GS

O'NEAL MD, LYNN W, 1112 W 6TH #202 66044-2249  
8412280 1902771111  
51 M 1902 86 OPH

ORCHARD MD, RICHARD A, 1112 W 6TH STE 202, 66044-2249  
841-2280 2802680549  
41 M 2802 74 OPH

OSBERN MD, LIDA, 404 MAINE, 66044-1397  
842-3635 1902771120  
52 F 1902 77 IM

PEES JR. MD, GERALD B, 2200 HARVARD RD, 66049-2611  
843-5160 1902710864  
45 M 1902 72 IM

PHIPPS MD, CARLA B, 500 ROCKLEDGE RD, 66049-2561  
841-6540 1902851417  
55 F 1902 0 FP

PRAEGER MD, MARK A, 1112 W 6TH STE 204, 66044-2249  
843-2010 1902680817  
42 M 1902 69 GS

PRICE JR MD, LAURANCE W, 2404 ORCHARD LN, 66049-2710  
749-6169 1902590711  
33 M 1902 60 PATH

REED MD, JAMES S, 1901 UNIVERSITY DR, 66044-4555  
0 1902470499  
23 M 1902 47 OO

REESE MD, JOHN L, 2417 PRINCETON BLVD, 66049-1625  
0 1902610657  
35 M 1902 62 OO

ROSS MD, JACK L, 211 E 8TH ST STE A1, 66044-0000  
865-2897 4812560781  
32 M 4812 63 P

SANDERS MD, J ALAN, 404 MAINE, 66044-1397  
842-2083 1902600716  
29 M 1902 62 PATH

SCHNOSE MD, GREGORY D, 2200 HARVARD RD, 66049-2611  
843-5160 1902761205  
51 M 1902 77 IM

SCHROEDER MD, SYDNEY O, 902 W 25TH ST, 66046-4437  
0 1902441324  
18 M 1902 44 OO

SCHWEGLER MD, RAYMOND A, 1504 UNIVERSITY DR, 66044-3148  
0 2604310884  
7 M 2604 35 OO

SEGEBRECHT MD, STEPHEN L, 1112 W 6TH ST STE 216, 66044-2249  
841-1107 1902800936  
55 M 1902 0 OTO

SILER MD, EUGENE T, 4311 QUAIL POINTE RD, 66047-1966  
0 1902520607  
24 M 1902 52 OO

SOSINSKI MD, RICHARD F, 2200 HARVARD RD, 66049-2611  
843-5160 1902761299  
51 M 1902 77 IM

STEIN MD, MATTHEW, 3310 CLINTON PARKWAY CT, 66047-2632  
842-7200 2803770983  
49 M 2803 0 ON

SUPPES MD, KIMBERLY C, 346 MAINE ST, 66044-0000  
842-6644 0  
62 F 2307 0 GS

TILSON MD, WAYNE R, 2240 VERMONT ST, 66046-3066  
0 5404771380  
49 M 5404 78 EM

VERNON MD, MARY C, 500 ROCKLEDGE RD, 66049-2561  
841-6540 1902771529  
52 F 1902 78 FP

VIERTHALER MD, STEPHEN L, 545 COLUMBIA DR STE 1001, 66049-2363  
832-1424 1902771693  
51 M 1902 78 OBG

WELL MD, MICHAEL A, 1112 W 6TH ST STE 106, 66044-2249  
749-0639 1606671128  
41 M 1606 74 U

WENDT MD, RICHARD G, PO BOX 1898, 66044-8898  
843-9125 1902831921  
57 M 1902 84 ORS

WERTZBERGER MD, JOHN, PO BOX 127, 66044-0127  
843-9125 1902630909  
36 M 1902 64 ORS

WOLLMANN MD, MARTIN, 2615 ORCHARD LN, 66049-2819  
0 1902571058  
26 M 1902 70 OO

## LEAVENWORTH — 913 *(Leavenworth County Medical Society)*

ASHKAR MD, ADNAN A, 920 6TH AVE, 66048-3229  
682-6818 52801730035  
42 M 52801 80 OBG

CONNOR MD, CAROL S, 4101 S 4TH ST, 66048-5046  
682-2000 1902810109  
52 F 1902 83 GS

DECENA MD, IMMACULADA M, 3500 S 4TH ST, 66048-5092  
682-3721 0  
45 F 74810 93 EM

DIALLO MD, GASTON I, 113 DELAWARE STE E, 66048-2800  
682-9030 86905630182  
35 M 86905 75 GE

DUYSAK MD, SAMI, 1126 VILAS ST, 66048-4245  
0 90201470471  
22 M 90201 0 OO

FLANNER MD, FRANK R, 922 5TH AVE, 66048-0000  
651-8179 1902790663  
43 M 1902 83 FP

GRISOLIA MD, ANDRES, 210 ELM, 66048-3519  
0 84708500011  
27 M 84708 63 OO

HALLER MD, CHRIS C, 4101 S 4TH ST TRFWY, 66048-0000  
651-0003 1902800448  
55 M 1902 81 GS



HAMMEKE MD, JOHN C, 1801 FOREST LN, 66048-6603  
 0 401610308  
 27 M 401 66 OO

JOHNSON MD, PAUL D, 221 DELAWARE #A, 66048-2823  
 682-2240 1902610401  
 36 M 1902 64 FP

MCALLASTER MD, CLAUDIA, 4500 S 4TH, 66048-5022  
 727-3100 1902771197  
 52 F 1902 79 PD

MCBRATNEY MD, KATHLEEN R, 4512 S 4TH TRFY, 66048-0000  
 727-1215 1902831165  
 57 F 1902 0 FP

MCCOLLUM MD, WILLIAM B, 920 6TH, 66048-3229  
 682-1466 1902660671  
 41 M 1902 68 TS

MENDIOLA MD, AMBROSIO P, RT 4 BOX 224A, 66048-9428  
 792-2511 74810671428  
 39 M 74810 82 EM

MENGEL MD, CHARLES E, 3221 MEADOW RD, 66048-4764  
 682-2000 2307570362  
 31 M 2307 88 IM

MERRITT MD, W HENRY, 1808 WESTWOOD DR, 66048-6626  
 0 702390265  
 14 M 702 58 OO

MILLS MD, VERNON A, 4514 S 4TH ST TRFWY, 66048-0000  
 727-6046 1902770981  
 51 M 1902 80 PD

PALMER MD, MARVIN M, 4512 S 4TH TRAFWY, 66048-0000  
 727-1151 702710634  
 45 M 702 77 OBG

PEARSON MD, MARK A, 920 6TH AVE, 66048-0000  
 682-8444 1902871345  
 55 M 1902 92 IM

RABE MD, MELVIN A, 600 S BROADWAY, 66048-2528  
 0 1902370478  
 14 M 1902 37 OO

SANTOS MD, FERMIN M, 4101 S 4TH ST, 66048-0000  
 682-2000 84706760686  
 49 M 84706 82 P

SILVA MD, CATHERINE, 4224 LAKEVIEW DR, 66048-4930  
 684-6350 1902800961  
 54 F 1902 90 FP

SNOW MD, DONALD L, 1127 VILAS, 66048-4244  
 0 64904540020  
 21 M 64901 62 OO

STEVENS MD, LEAH J, 920 6TH AVE, 66048-3229  
 682-2424 1902810214  
 55 F 1902 0 FP

STRUTZ MD, WILLIAM C, 1918 WESTWOOD DR, 66048-6628  
 682-8868 5606431246  
 8 M 5606 59 R

VOORHEES MD, CARROLL D, 2510 GIRARD, 66048-4305  
 0 1902520739  
 25 M 1902 52 OO

### LEBO — 316 (Flint Hills Medical Society)

HUTCHISON MD, JOE R, BOX 303, 66856-0303  
 256-6346 1902830916  
 55 M 1902 86 FP

### LEOTI — 316 (Southwest Kansas Medical Society)

JUSON MD, MANUEL J, PO BOX 848, 67861-0848  
 375-2222 0  
 48 M 74811 92 FP

### LIBERAL — 316 (Seward County Medical Society)

ALLEN MD, RAY E, 2 PLAZA DR, 67901-2743  
 624-5691 1902630020  
 37 M 1902 64 IM

CAEDO MD, CARMELITA D, 2401 LILAC DR, 67901-4907  
 624-1651 74801634196  
 41 F 74801 77 R

ESTRADA MD, EDMUNDO C, 102 E 11TH, 67901-2723  
 624-2565 74801671938  
 43 M 74801 80 GS

GRIMES MD, I ROSS, PO BOX 2856, 67905-2856  
 624-1676 3901540283  
 27 M 3901 61 TS

KOONS MD, JESS W, PO BOX 2886, 67905-2886  
 624-3841 1902570469  
 27 M 1902 57 OPH

NEVINS MD, RICHARD L, 1410 WESTERN AVE, 67901-2212  
 624-0255 3901730902  
 47 M 3901 75 FP

PALTOO MD, RAYMOND M, PO BOX 6005, 67901-6005  
 626-7200 0  
 45 M 0 92 U

PATRON MD, RICARDO A, PO BOX 2529, 67905-2529  
 624-3811 74808570207  
 31 M 74808 83 OBG

PETERSON MD, HUBERT C, PO BOX 1340, 67905-1340  
 624-1651 401680624  
 43 M 401 0 PATH

ZINALI MD, ASSADOLLAH, PO BOX 1891, 67905-1891  
 624-1651 51701720249  
 46 M 51701 79 R

### LINDSBORG — 913 (McPherson County Medical Society)

CARLSSON MD, E R, PO BOX 109, 67456-0109  
 0 1902440271  
 0 M 1902 0 OO

FREDRICKSON MD, DUANE E, 121 W LINCOLN, 67456-2318  
 227-3371 1902660310  
 39 M 1902 67 FP

MURFITT MD, MALCOLM C, 125 W STATE, 67456-2116  
 0 801410375  
 13 M 801 46 OO

### LOUISBURG — 913 (Johnson County Medical Society)

BERGH MD, JAMES R, 24715 MISSION -BELLEVIEW, 66053-0000  
 541-5384 1902840172  
 57 M 1902 85 IM

### LYNDON — 913 (Franklin County Medical Society)

MARCELL MD, GERALD W, PO BOX 266, 66451-0266  
 828-3143 1902831122  
 46 M 1902 89 FP

STOUT MD, NILES M, PO BOX 147, 66451-0147  
 828-4521 1902500711  
 16 M 1902 50 FP

**LYONS — 316**  
**(Rice County Medical Society)**

GRIMES MD, JAMES T, 215 SOUTH ST JOHN, 67554-2638  
0 1902530319  
27 M 1902 53 OO

SIEMENS MD, RICHARD A, 1221 W NOBLE, 67554-3026  
257-5124 1902590826  
30 M 1902 60 FP

STRINGFIELD MD, SCOTT L, 1221 W NOBLE, 67554-3026  
257-5124 1902841756  
57 M 1902 88 FP

TALBERT MD, TIMOTHY C, 1221 W NOBLE ST, 67554-3026  
257-5124 1902891800  
63 M 1902 0 FP

TOBIAS MD, ROGER R, 1221 W NOBLE, 67554-3026  
257-5124 1902761400  
51 M 1902 82 FP

**MANHATTAN — 913**  
**(Riley County Medical Society)**

AAMODT MD, LEONARD W, 2101 LAUREL PL, 66502-2121  
0 0  
0 M 0 0 OBG

BAKER MD, RICHARD B, 2600 ANDERSON AVE, 66502-2802  
537-4200 4113680062  
42 M 4113 76 ORS

BAMBARA MD, JOHN F, 1133 COLLEGE AVE, 66502-2700  
539-5363 1902751561  
46 M 1902 88 PATH

BARLOW MD, JOHN M, 1133 COLLEGE AVE, 66502-2700  
539-3504 1102710050  
45 M 1102 81 OTO

BIBERSTEIN MD, GREG A, 1133 COLLEGE AVE, 66502-2700  
537-9030 1902842248  
56 M 1902 0 PD

BOESE MD, KENNETH M, 1825 ALABAMA LN, 66502-2304  
0 1902560145  
25 M 1902 56 OO

CATHEY MD, ROBERT H, 1133 COLLEGE AVE, 66502-2700  
537-4990 1902680167  
42 M 1902 69 D

COONROD MD, SCOTT A, 1133 COLLEGE AVE A1022, 66502-0000  
537-2651 0  
62 M 1902 93 IM

CRANE MD, CHARLES H, 3819 EMERALD CIR, 66502-7514  
0 3520460151  
22 M 3520 62 OO

DEVINE MD, JOHN P, 1133 COLLEGE AVE, 66502-2795  
537-8710 1902832251  
56 M 1902 0 U

DOUBEK MD, DEBRA L, 2900 AMHERST AVE, 66502-3093  
776-9761 1902860491  
58 F 1902 87 FP

DURKEE MD, WILLIAM R, 440 OAKDALE DR, 66502-3736  
0 1902450234  
23 M 1902 45 OO

FISCHER MD, REX R, 1133 COLLEGE AVE, 66502-2700  
776-1400 3005600251  
34 M 3005 68 OBG

FREEMAN MD, FRED A, 1133 COLLEGE AVE, 66502-2700  
537-8710 1902690383  
42 M 1902 70 U

GARDNER MD, JAMES D, 1133 COLLEGE AVE, 66502-2700  
537-4940 2834710318  
43 M 2834 76 IM

HANCOCK MD, DANIEL E, 1133 COLLEGE AVE PO BOX 128, 66502-0002  
539-5363 2803710239  
45 M 2803 78 PATH

HAUG MD, STEVE, 1133 COLLEGE AVE, 66502-0000  
537-9030 1902862214  
0 M 1902 88 PD

HAUN MD, RUDY T, 1133 COLLEGE AVE BLDG D, 66502-2700  
537-8611 1902780781  
49 M 1902 82 OBG

HEASTY MD, ROBERT G, 3120 HERITAGE LN #169, 66502-2259  
0 3519380411  
11 M 3519 46 OO

HENNING JR MD, HAROLD J, 1133 COLLEGE AVE, 66502-2700  
537-1414 1902820732  
55 M 1902 0 OBG

HINKIN MD, DOUGLAS P, 2900 AMHERST AVE, 66502-3003  
776-9761 1902780803  
53 M 1902 84 FP

HOLIDAY MD, ALLAN, 2600 ANDERSON AVE, 66502-0000  
537-4200 1902862141  
57 M 1902 0 ORS

HOSTETTER MD, PHILIP H, 2045 JAY CT, 66502-0000  
0 0  
17 M 1902 0 OO

JONES MD, WILLIAM T, 2600 ANDERSON AVE, 66502-2802  
537-4200 1902752257  
50 M 1902 85 ORS

JUBELT MD, HILBERT P, 2010 MEADOWLARK RD, 66502-4559  
0 1611431313  
19 M 1611 49 OO

KALDOR MD, RICHARD H, 1133 COLLEGE AVE, 66502-2700  
539-5363 2401661339  
40 M 2401 73 PATH

KENYON D O, PHIL, 1823 COLLEGE AVE, 66502-3351  
776-3322 2878810921  
44 M 2878 0 GP

KIRK MD, THOMAS E, 1133 COLLEGE AVE, 66502-2700  
776-3451 3005710463  
44 M 3005 76 OPH

KLINGLER JR MD, EUGENE A, 1133 COLLEGE AVE, 66502-2700  
539-5341 1902620466  
35 M 1902 63 GS

KLOBASA MD, CHARLES L, 225 SOUTHWIND PL, 66502-3123  
776-5858 2803750494  
49 M 2803 80 CHP

KUMAR MD, NANDA, 1133 COLLEGE AVE, 66502-2700  
537-9349 0  
0 M 0 0 N

LOWE MD, STANLEY W, 1133 COLLEGE AVE, 66502-2700  
776-3451 1902590516  
32 M 1902 63 OPH

LYONS JR MD, FRANK C, 1133 COLLEGE AVE, 66502-2700  
539-7641 3840700916  
44 M 3840 74 DR

MARSHALL MD, RONALD L, 1133 COLLEGE AVE, 66502-2795  
537-1414 3005670461  
43 M 3005 0 OBG

MCNEIL MD, ELBERT D, 2020 HUNTING AVE, 66502-3638  
0 702480337  
22 M 702 49 OO

MEEK MD, PALMER F, 1133 COLLEGE AVE, 66502-2700  
537-2651 1902710716  
45 M 1902 71 IM

MOSIER MD, MIKE, 2900 AMHERST AVE, 66502-3003  
776-9761 1902771006  
52 M 1902 0 FP

MOSIER MD, STEVEN J, 2900 AMHERST AVE, 66502-3003  
776-9761 1902680701  
49 M 1902 75 FP



MOWRY MD, GERALD L, 1441 ANDERSON AVE, 66502-4030  
 776-4200 1902530599  
 26 M 1902 53 OBG

O'DONNELL MD, HARRY E, 1926 LEXINGTON 66502-7549  
 4113420761  
 14 M 4113 42 OO

OLNEY MD, ROBERT D, 1133 COLLEGE AVE, 66502-2700  
 539-7555 3005510553  
 27 M 3005 59 GS

PETERSON D O, PEGGY S, 1133 COLLEGE AVE BOX 128, 66502-2700  
 539-5363 0  
 52 F 2878 80 PATH

PETERSON MD, JACK T, 6262 W 59TH AVE, 66502-9798  
 0 1902500525  
 25 M 1902 50 OO

PHILIPP MD, JOSEPH T, 1133 COLLEGE AVE BLDG D, 66502-2700  
 537-7373 1902710881  
 45 M 1902 72 OPH

ROSE MD, GRAHAM C, 1133 COLLEGE AVE, 66502-2700  
 537-9030 4706701031  
 46 M 4706 74 PD

SHEFFIELD MD, MICHAEL A, 1133 COLLEGE AVE, 66502-2700  
 539-7641 1902821721  
 55 M 1902 86 DR

SHIELDS MD, THOMAS M, 1133 COLLEGE AVE, 66502-2700  
 539-5341 1902742537  
 49 M 1902 77 GPVS

SMITH MD, RACHEL S, 1133 COLLEGE AVE, 66502-2700  
 537-9030 1902851590  
 58 F 1902 0 PD

STONE MD, G REX, 360 WILDCAT CREEK RD, 66502-9765  
 0 1902540926  
 29 M 1902 54 OO

TAYLOR MD, BARBARA D, 1133 COLLEGE AVE, 66502-2700  
 357-4940 1902751901  
 50 F 1902 79 IM

TIEMANN MD, WILLIAM H, 1133 COLLEGE AVE, 66502-2700  
 537-4940 3005670747  
 42 M 3005 73 FP

VOLKMANN II MD, HARLEY W, 1133 COLLEGE AVE, 66502-2700  
 539-7641 1902721173  
 47 M 1902 73 R

WALL MD, KEVIN K, 2900 AMHERST AVE, 66502-3003  
 0 2101791362  
 53 M 2101 0 FP

WETZEL MD, MARK, 1133 COLLEGE AVE, 66502-2700  
 537-2651 1902861927  
 59 M 1902 0 IM

WIGGLESWORTH MD, ANNE, 1133 COLLEGE AVE BLDG A, 66502-2700  
 539-4738 1902753016  
 40 F 1902 79 OBG

WRIGHT MD, KEITH A, 2900 AMHERST AVE, 66502-3093  
 776-9761 0  
 53 M 1902 91 FP

## MANKATO — 913

(Republic County Medical Society)

KIMBALL MD, RICHARD R, 102 S CENTER, 66956-2202  
 378-3511 1001720585  
 45 M 1001 73 FP

## MARION — 316

(McPherson County Medical Society)

HODSON MD, DON W, 537 S FREEBORN, 66861-1256  
 382-3722 1902790914  
 53 M 1902 0 FP

## MARYSVILLE — 913

(Northeast Kansas Medical Society)

ARGO MD, DONALD, 808 N 19TH, 66508-1358  
 562-2303 3005640058  
 36 M 3005 65 FP

BROWN MD, RANDALL J, 1902 MAY ST, 66508-1200  
 562-3942 1902810125  
 55 M 1902 92 FP

LAWS MD, LEWIS R, 808 N 19TH, 66508-1358  
 562-2303 1902540535  
 25 M 1902 54 FP

RYAN MD, JOHN M, 1902 MAY ST, 66508-1200  
 562-3942 1902811164  
 47 M 1902 0 FP

UGARTE MD, FERNANDO, 1902 MAY ST, 66508-1200  
 562-2517 1602650126  
 42 M 1602 0 GS

## MC PHERSON — 316

(McPherson County Medical Society)

BILLINGS MD, THOMAS, 400 W 4TH, 67460-2306  
 241-5500 1902660107  
 39 M 1902 67 FP

BRANDSTED MD, ERNEST C, 400 W 4TH, 67460-2306  
 241-1654 1606440185  
 18 M 1606 47 OBG

BULLER MD, DAVID L, 400 W 4TH, 67460-2306  
 241-7400 1902850232  
 58 M 1902 0 FP

CABRERA MD, ALBERT, 915 N WALNUT, 67460-2439  
 241-4079 74801553021  
 30 M 74801 80 GS

CLAASSEN MD, SAMUEL D, 400 W 4TH, 67460-2306  
 241-7033 1902780323  
 53 M 1902 79 IM

COLLIER MD, WILLIAM J, 400 W 4TH, 67460-2306  
 241-1766 3605480097  
 25 M 3605 59 GS

FERREE MD, RICHARD A, 400 W 4TH, 67460-2306  
 241-7400 3006760189  
 51 M 3006 78 FP

FIELDS MD, GALEN W, 333 C -S LAKESIDE DR, 67460-0000  
 0 1902490228  
 15 M 1902 49 OO

JOHNSON MD, J RICHARD, 400 W 4TH, 67460-2306  
 241-4293 1902550603  
 28 M 1902 55 IM

PIERSON MD, WEIR, 1000 HOSPITAL DR, 67460-2326  
 241-1445 1902441197  
 17 M 1902 44 FP

PRICE MD, VAUGHAN C, PO BOX 451, 67460-0451  
 0 4706290376  
 5 M 4706 32 GS

THOMAS MD, GREGORY MCQUEEN, 400 W 4TH, 67460-2306  
 241-7400 1902731161  
 47 M 1902 79 FP

WATSON MD, RICHARD L, 823 N MAIN ST, 67460-0000  
 241-7788 1902851891  
 59 M 1902 0 FP

**McLOUTH — 913**  
(Shawnee County Medical Society)

PALAGANAS-TOSCO MD, AMANDA C, PO BOX 69, 66054-0069  
796-6116 74801702132  
45 F 74801 86 FP

**MEADE — 316**  
(Iroquois County Medical Society)

FELDMAYER MD, SEELEY T, PO BOX 1030, 67864-1030  
873-2112 74811800027  
46 M 74811 81 GP

HILL MD, RICHARD H, BOX 709, 67864-0709  
0 1902440697  
18 M 1902 44 OO

**MEDICINE LODGE — 316**  
(Ninnescah Medical Society)

MEADOR D O, RICHARD W, 710 N WALNUT, 67104-1019  
886-5949 0  
0 M 0 0

STUCKY MD, DEAN E, 901 N WALNUT, 67104-1052  
886-5653 1902600848  
33 M 1902 61 FP

**MINNEAPOLIS — 913**  
(Saline County Medical Society)

BARKER MD, STEVEN E, 311 N MILL, 67467-2122  
392-2144 1902760098  
51 M 1902 77 FP

WEDEL MD, KENNETH D, 311 N MILL, 67467-2122  
392-2144 1902600937  
32 M 1902 61 FP

WEDEL MD, KERMIT G, 311 N MILL, 67467-2122  
392-2144 1902600945  
32 M 1902 61 FP

**MINNEOLA — 316**  
(Iroquois County Medical Society)

STEPHENS D O, G MARCUS, PO BOX 97, 67865-0097  
885-4202 2878840189  
57 M 2878 85 FP

STEPHENS MD, CHARLES, BOX 97, 67865-0097  
885-4202 2803580319  
33 M 2803 60 FP

**MONTEZUMA — 316**  
(Ford County Medical Society)

SCHOWENGERDT MD, ANDREW W, PO BOX 384, 67867-0384  
846-2251 1902881472  
62 M 1902 93 FP

**MOUNDRIDGE — 316**  
(Harvey County Medical Society)

KAUFMAN MD, WILLARD E, PO BOX 640, 67107-0640  
0 1902530459  
28 M 1902 53 OO

LOGANBILL MD, VARDEN J, PO BOX 640, 67107-0640  
345-6322 1902540560  
26 M 1902 54 FP

**MULVANE — 316**  
(Sedgwick County Medical Society)

CARRO MD, ANTONIO L, 410 E MAIN ST, 67110-1732  
777-0101 1902850305  
57 M 1902 87 FP

COBB MD, LESLIE H, RR 1 BOX 196, 67110-9754  
0 4804470129  
17 M 4804 49 OO

HUFFORD MD, DAVID W, 410 E MAIN ST, 67110-1732  
777-0101 0  
58 M 1902 86 FP

MCKERRACHER MD, ROBERT D, 10 LAKE DR, 67110-1011  
0 3901550742  
27 M 3901 56 OO

**NEODESHA — 316**  
(Southeast Kansas Medical Society)

BARRETT MD, BRADLEY H, PO BOX 315, 66757-0315  
325-3055 1902830177  
57 M 1902 0 FP

CHRONISTER MD, BERT, PO BOX 118 806 MAIN, 66757-0118  
325-2622 1902640122  
38 M 1902 65 FP

MOORHEAD JR MD, F ALLEN, 709 MAIN BOX 180, 66757-1634  
325-2200 1902650624  
39 M 1902 66 FP

**NESS CITY — 913**  
(Central Kansas Medical Society)

IMSEIS MD, MIKHAIL Y, 722 E LOCUST, 67560-1726  
798-2203 91502750068  
50 M 33004 0 GP

**NEWTON — 316**  
(Harvey County Medical Society)

ALLEN MD, FRANCES A, 1112 BOYD, 67114-1573  
0 1902430012  
15 F 1902 43 OO

BATES MD, MICHAEL N, 215 S PINE ST STE 302, 67114-3763  
283-4153 1902751587  
50 M 1902 77 OBG

BECK MD, WILLIAM R, 203 E BROADWAY ST, 67114-2223  
283-2800 1902830223  
55 M 1902 87 OPH

BOGNER MD, PAUL F, 203 E BROADWAY ST, 67114-2223  
283-2800 1902770158  
52 M 1902 80 GS

CARPER MD, OWEN E, 5 SYCAMORE CT, 67114-6311  
283-8522 1902640106  
37 M 1902 65 FP

CLAASSEN MD, MILTON A, 201 S PINE ST, 67114-3745  
283-3600 1902580189  
32 M 1902 59 ORS

CRAIG MD, CHARLES C, 203 E BROADWAY ST, 67114-2223  
283-2800 1902710252  
45 M 1902 72 ORS

ENNS MD, EUGENE K, 6 INDIAN LN, 67114-4342  
0 1902400199  
15 M 1902 40 OO



FENT II MD, LEE S, 201 S PINE ST, 67114-3745  
 283-3600 1902700354  
 44 M 1902 70 PD

FENT MD, LEE S, 701 E 5TH ST, 67114-3011  
 0 82834430617  
 14 M 2834 44 OO

FRUECHTING MD, LYNNE A, 201 S PINE ST, 67114-3745  
 283-3600 1902850933  
 59 F 1902 88 PD

GLOVER II MD, RICHARD M, 203 E BROADWAY ST, 67114-3703  
 283-2800 1902872147  
 56 M 1902 0 FP

GLOVER MD, RICHARD M, 203 E BROADWAY ST, 67114-2223  
 283-2800 1902530297  
 21 M 1902 53 FP

GRISWOLD MD, DALE G, 1500 TERRACE DR, 67114-6316  
 0 1902530327  
 27 M 1902 53 OO

HALE MD, WILLIAM R, BOX 467, 67114-0467  
 283-2400 1902770581  
 52 M 1902 79 P

HAMM MD, ORVAL L, 1004 LORNA LN, 67114-3745  
 0 1902490261  
 23 M 1902 49 OO

HEINRICHS MD, DANIEL J, 1901 E 1ST ST, 67114-5010  
 283-2400 4002560289  
 29 M 4002 89 P

ISAAC MD, CHARLES A, 203 E BROADWAY ST, 67114-2223  
 283-2800 1902490341  
 25 M 1902 49 U

JANTZ MD, JONATHAN W, 201 S PINE ST, 67114-3745  
 283-3600 2802830613  
 55 M 2802 89 PD

KLIEWER MD, VERNON L, PO BOX 467, 67114-0467  
 283-2400 1606570585  
 31 M 1606 58 PA

KUMAR MD, SURINDER, 201 S PINE ST, 67114-3745  
 283-3600 49512690016  
 46 M 1902 78 OBG

LINDHOLM MD, GERALD R, 203 E BROADWAY ST, 67114-2223  
 283-2800 1902760772  
 51 M 1902 78 FP

MOORE MD, JAMES E, 1901 E 1ST ST, 67114-5010  
 283-2400 1902740480  
 48 M 1902 75 P

OLSON MD, ERWIN T, 3 INDIAN LN, 67114-4341  
 0 1902470448  
 19 M 1902 47 OO

PATRON MD, RICARDO F, 201 S PINE ST, 67114-0000  
 283-4088 1902881197  
 61 M 1902 0 PD

PEREIRA MD, WILLY G, 201 S PINE ST, 67114-3745  
 284-5150 73701670091  
 39 M 73701 73 IM

PRENTISS MD, HAROLD, 1305 TERRACE DR, 67114-6313  
 283-9433 1720620975  
 36 M 1720 77 R

QAMAR MD, YUSUF, 203 E BROADWAY ST, 67114-2223  
 283-2800 70409610046  
 38 M 70409 70 IM

ROBERTS MD, AUDREY M, 201 S PINE ST, 67114-0000  
 284-5006 1902881341  
 62 F 1902 0 PD

SCHMIDT MD, HERBERT R, 413 SE 10TH ST, 67114-4409  
 0 1902340463  
 3 M 1902 34 OO

SILLS MD, CHARLES T, 1631 HILLCREST, 67114-1342  
 0 1902370524  
 9 M 1902 37 OO

SIMMONS MD, ROBERT E, 215 S PINE ST, 67114-3761  
 283-5041 1902742014  
 49 M 1902 76 IM

STEVENS MD, RONALD, 201 S PINE ST, 67114-3745  
 283-3600 64914777249  
 49 M 64914 87 FP

TANDOC JR MD, VALENTIN T, 201 S PINE ST, 67114-3745  
 283-3600 74811620061  
 39 M 74809 74 U

VOGT MD, VERNON W, 323 E 2ND, 67114-3405  
 0 3005530864  
 22 M 3005 55 OO

WHEELER MD, DWIGHT E, 201 S PINE ST, 67114-3745  
 283-3600 2012760941  
 50 M 2012 79 IM

WIENS MD, J WENDELL, 201 S PINE ST, 67114-3745  
 283-3600 1902590982  
 32 M 1902 60 GS

WIENS MD, TIMOTHY B, 201 S PINE ST, 67114-0000  
 284-5006 1902851956  
 55 M 1902 0 FP

WILLIAMS MD, MICHAEL K, 203 E BROADWAY ST, 67114-2223  
 283-2800 1902871868  
 60 M 1902 91 FP

ZAYLOR D O, CHARLES L, 1901 E 1ST, 67114-5010  
 283-2400 2878820471  
 52 M 2878 0 GS

### NORTH NEWTON — 316 (Reno County Medical Society)

FRIESEN MD, ORLANDO J, PO BOX 97, 67117-0097  
 0 1902560391  
 27 M 1902 56 OO

HARMS MD, EDWIN M, 3001 IVY DR #1125, 67117-8005  
 0 3901340179  
 6 M 3901 36 OO

HARMS MD, WILMER A, 2904 IVY DR #8, 67117-8000  
 0 1902560480  
 22 M 1902 56 OO

### NORTON — 913 (Northwest Kansas Medical Society)

COLIP MD, FLOYD M, 711 N NORTON, 67654-1449  
 877-3305 1902610177  
 25 M 1902 63 GP

COOPER MD, ARTHUR E, 307 W WILBERFORCE, 67654-1331  
 0 1611350330  
 8 M 1611 36 OO

HARTLEY MD, ROY W, 711 N NORTON, 67654-1449  
 877-3305 1902630305  
 37 M 1902 64 GP

HARTMAN MD, ROGER L, 711 N NORTON, 67654-1449  
 877-3305 1902610339  
 35 M 1902 65 FP

### NORTONVILLE — 913 (Atchison County Medical Society)

MADISON MD, WILLARD A, PO BOX 88, 66060-0088  
 0 1902510466  
 20 M 1902 51 OO

**OAKLEY — 913**  
*(Northwest Kansas Medical Society)*

OHMART MD, RICHARD V, PO BOX 756, 67748-0756

672-3261	1902620636		
36	M	1902	63 FP

**OBERLIN — 913**  
*(Northwest Kansas Medical Society)*

LABASH MD, STEPHEN S, 902 W COLUMBIA PO BOX 110, 67749-0110

475-2221	1002690582		
42	M	1002	89 GS

**OLATHE — 913**  
*(Johnson County Medical Society)*

ANDERSON MD, CRAIG A, 20375 W 151ST ST STE 101, 66061-5353

782-8577	1902850020		
58	M	1902	0 GS

BALANOFF MD, ARNOLD Z, 20375 W 151ST ST STE 104, 66061-0000

782-2525	1803670061		
42	M	1803	72 PD

BAVISHI MD, SAROJ A, 20375 W 151ST #407, 66061-7209

829-9100	49519710063		
46	F	49583	91 OBG

BROOKS MD, CHARLES L, 20375 W 151ST ST STE 170, 66061-5353

829-2829	1902790272		
54	M	1902	85 GE

DELPHIA MD, ROBERT E, PO BOX 4000-13045 S MUR-LEN RD, 66062-0000

782-1610	1902560293		
24	M	1902	56 FP

EPP MD, GALEN W, 20375 W 151ST ST STE 301, 66061-7207

782-8300	1902810958		
55	M	1902	90 IM

FEEHAN MD, JOHN M, 405 S CLAIRBORNE PO BOX 910, 66061-0910

782-3322	1902840571		
57	M	1902	87 FP

FOWLER MD, DENNIS L, 20375 W 151ST ST STE 101, 66061-5353

782-8577	1902731357		
48	M	1902	0 GS

GAUGHAN MD, REBECCA N, 13025 S MUR-LEN #200, 66062-1230

764-2737	3006820343		
55	F	3006	87 OTO

HALVORSON MD, HOWARD C, 20375 W 151ST ST STE 201, 66061-5360

782-2020	5404660260		
41	M	5404	75 U

HERRON MD, KRISTINE G, 20375 W 151ST ST STE 104, 66061-5353

474-9353	1902840792		
57	F	1902	0 NEP

HOLMAN MD, JON B, 1125 W SPRUCE, 66061-3123

831-2550	1902630364		
33	M	1902	64 P

HUDSON MD, ROBERT P, 12925 FRONTIER RD, 66061-9676

588-7040	1902520313		
26	M	1902	52 IM

HULTGREN MD, MYRON K, 1803 S RIDGEVIEW, 66062-0000

782-7300	1902681163		
41	M	1902	69 FP

JENSEN MD, THOMAS M, 20375 W 151ST ST STE 106, 66061-5353

782-1148	3005730464		
47	M	3005	75 ORS

KENNEDY MD, FREDERICK R, 20375 W 151ST ST STE 101, 66061-5353

782-8577	1902680493		
42	M	1902	0 GS

KLEINSASSER MD, WARREN L, 14901 W 117TH ST, 66062-9307

764-5555	2604620697		
37	M	2604	88 FP

LAIRD MD, DALE D, 20375 W 151ST ST STE 100, 66061-5351

782-3631	1902680540		
42	M	1902	69 OPH

MACFARLANE MD, DOUGLAS B, 20375 W 151ST ST STE 200, 66061-5360

782-3073	1902800715		
54	M	1902	81 OBG

MARINE MD, CLIFFORD S, 20375 W 151ST STE #250, 66061-5360

764-6262	1902841195		
57	M	1902	85 OBG

MATTHEW MD, WILLIAM L, PO BOX 910, 66062-1774

782-3322	1902560706		
29	M	1902	56 FP

MCCANN MD, WILLIAM E, 1006 LENNOX DR, 66062-2133

0	3901480337		
22	M	3901	53 OO

MENDLICK MD, R MICHAEL, 20375 W 151ST ST STE 106, 66061-5353

782-1148	1902700788		
44	M	1902	71 ORS

MORGAN II MD, DAVID L, 20375 W 151ST ST STE 301, 66061-7207

782-8300	2846750161		
49	M	2820	75 IM

NOTTINGHAM MD, ROBERT M, PO BOX 4000-13045 S MUR-LEN RD, 66062-0000

782-1610	1902781401		
49	M	1902	0 FP

RHOADS MD, ANNE C, 20375 W 151ST ST STE 350, 66061-7207

764-6996	1902831521		
57	F	1902	85 GS

ROMONDO MD, STEVEN A, 20375 W 151ST ST STE 406, 66061-7209

782-2292	1902730989		
47	M	1902	75 AN

RUHLEN MD, JAMES L, 20375 W 151ST ST STE 301, 66061-7207

782-8300	1902720959		
46	M	1902	73 IM

RUHLEN MD, THOMAS F, 20333 W 151ST ST, 66061-5350

791-4362	1902761141		
51	M	1902	0 PATH

SCHAPER MD, DANIEL C, 20375 W 151ST STE 106, 66061-5353

782-1148	1902810681		
54	M	1902	87 ORS

SCHERMOLY MD, MARTIN V, 20375 W 151ST ST, 66061-5353

782-8300	1902841578		
58	M	1902	0 IM

SHEFFER MD, KEITH D, 20375 W 151ST STE 106, 66061-5353

782-1148	1720671651		
37	M	1720	74 ORS

SNIDER MD, BRUCE B, 20375 W 151ST ST STE 250, 66061-5360

764-6262	1902861633		
59	M	1902	89 OBG

SNYDER MD, RICHARD H, 20375 W 151ST ST STE 406, 66061-7209

782-2292	1902731080		
45	M	1902	75 AN

STANDLEE MD, TIM E, 20375 W 151ST ST STE 406, 66061-7209

782-2292	1902821801		
56	M	1902	85 AN

WARNER MD, RICHARD B, 20375 W 151ST ST STE 206, 66061-5360

782-2593	1902721203		
45	M	1902	85 P

WETZEL MD, JAMES L, 20375 W 151ST ST STE 301, 66061-7207

782-8300	1803811551		
52	M	1803	0 IM

WOODS MD, S DWIGHT, 20375 W 151ST ST STE 350, 66061-7207

764-6996	1902551219		
30	M	1902	55 GS

ZEILER MD, STEVEN B, 20375 W 151ST ST STE 301, 66061-5353

782-8300	1103820851		
57	M	1103	83 IM



ZIMMERMAN MD, BRUCE E, 20375 W 151ST ST STE 203, 66061-5360  
 782-3377 4812781729  
 49 M 4812 79 OTO

ENGELKEN MD, SUSAN F, PO BOX 460, 66521-0460  
 889-4271 3401790127  
 49 F 3401 84 GP

**ONAGA — 913**  
*(Pottawatomie Medical Society)*

TARVIN MD, RANDY J, PO BOX 120, 66521-0120  
 889-4241 1902862010  
 59 M 1902 89 FP

WALSH MD, THOMAS E, PO BOX 120, 66521-0120  
 889-4241 1902741212  
 48 M 1902 75 FP

**OSAGE CITY — 913**  
*(Flint Hills Medical Society)*

ADAMS MD, DWIGHT L, PO BOX 265, 66523-0265  
 528-3161 1902560013  
 31 M 1902 56 GP

**OSAWATOMIE — 913**  
*(Miami County Medical Society)*

APPENFELLER MD, WILLIAM O, 524 BROWN AVE, 66064-1322  
 755-3166 1902530033  
 25 M 1902 53 FP

**OTTAWA — 913**  
*(Franklin County Medical Society)*

DUNDEE MD, JOHN T, PO BOX H, 66067-0340  
 242-4885 91801630028  
 39 M 53901 0 DR

GOLLIER II MD, ROBERT A, 1418 S MAIN ST #S-5, 66067-3543  
 242-1620 1902660344  
 40 M 1902 67 FP

HADLEY MD, DELMONT C, 1320 S ASH, 66067-3413  
 242-3891 1902640335  
 35 M 1902 65 FP

HENNING MD, CALVIN W, PO BOX 2, 66067-0002  
 0 1902350167  
 5 M 1902 35 OO

RANSOM MD, WILLARD B, 1418 S MAIN ST #S-5, 66067-3543  
 242-1620 1902782300  
 49 M 1902 79 FP

REYES JR MD, FRANCISCO A, 1320 S ASH, 66067-3413  
 242-5312 74801610734  
 38 M 74801 74 GS

REYNOSO MD, LANCE A, 1418 S MAIN ST #S-5, 66067-3543  
 242-1620 1902861404  
 61 M 1902 0 FP

SPEER MD, LOUIS N, PO BOX D, 66067-0220  
 242-1257 1606411177  
 14 M 1606 41 FP

SPRATT MD, DENNIS P, 1418 S MAIN ST #S-5, 66067-3543  
 242-1620 1902841705  
 0 M 1902 0 FP

**OVERBROOK — 913**  
*(Flint Hills Medical Society)*

RUBLE JR MD, JAMES L, PO BOX 305, 66524-0305  
 665-7133 1902530785  
 26 M 1902 53 FP

**PAOLA — 913**  
*(Miami County Medical Society)*

ANDERSON MD, DOUGLAS S, 1313 BAPTISTE DR, 66071-1377  
 294-2000 0  
 57 M 1902 0 FP

BANKS MD, DONALD E, 1004 CHEROKEE LN PO BOX 298, 66071-0298  
 0 1902880077  
 59 M 1902 0 FP

BANKS MD, ROBERT E, PO BOX 298, 66071-0298  
 294-2305 1902550085  
 29 M 1902 55 FP

HOLSCHER MD, MARK R, 1313 BAPTISTE DR, 66071-1377  
 294-2000 1902850798  
 55 M 1902 0 FP

JACKSON MD, THOMAS M, PO BOX 412, 66071-0412  
 294-4082 1902840946  
 56 M 1902 91 GS

OMMEN MD, SHARI L, 1313 BAPTISTE DR, 66071-1377  
 294-2000 0  
 54 F 2803 91 FP

ROWLETT MD, JACK G, PO DRAWER A, 66071-0701  
 294-2356 1902520551  
 21 M 1902 52 FP

STANLEY MD, REX C, PO DRAWER A, 66071-0701  
 294-2056 1902520631  
 24 M 1902 52 GS

**PARSONS — 316**  
*(Labette County Medical Society)*

AVES MD, AGNES, 1509 MAIN ST, 67357-3332  
 421-0600 74801592353  
 38 F 74801 72 IM

AVES MD, RENATO B, 1509 MAIN ST, 67357-3332  
 421-0600 74801592264  
 35 M 74801 72 GS

CAREY MD, LARRY J, 400 KATY AVE, 67357-2400  
 421-2700 1902770271  
 51 M 1902 78 FP

CHOI MD, PHILIP S, 2601 GABRIEL AVE, 67357-2341  
 421-6550 58302490170  
 26 M 58302 81 GP

CORNELL MD, EARL G, 1509 MAIN ST, 67357-3332  
 421-0600 1902790434  
 54 M 1902 83 FP

DAIZ MD, ANTONIO S, PO BOX 935, 67357-0935  
 421-4880 74810630918  
 37 M 74810 80 DR

DILLON MD, WILLIAM L, LABETTE CO MED CL BOX H, 67357-0000  
 421-0881 1902710295  
 45 M 1902 73 ORS

KISHORE MD, SHEELA, 2907 JOHNSTON RD, 67357-4631  
 421-2741 49511660041  
 43 F 49511 74 AN

LAVA MD, CHIRUND, PO BOX 290, 67357-0290  
 421-6210 89102630484  
 40 M 89102 76 GS

MENON MD, REMA, 2601 GABRIEL AVE, 67357-2399  
 421-6550 49531730126  
 47 M 49531 78 GP

MILLER MD, DEAN M, 203 CRESTVIEW DR, 67357-3511  
 0 1902480311  
 22 M 1902 48 OO

MILLER MD, STEPHEN F, 1509 MAIN ST, 67357-3332  
 421-0600 1902700800  
 45 M 1902 72 GS

MOSIER MD, KEVIN M, BOX H STE ONE, 67357-0000  
 421-0881 1902831343  
 57 M 1902 88 ORS

PAI MD, RADHA V, PO BOX 1057, 67357-1057  
 421-0080 49553700077  
 45 F 6701 78 AN

PAI MD, VARADARAJ S, PO BOX 1057, 67357-1057  
 421-0080 49521650205  
 42 M 6701 78 U

PARANJOTHI MD, SUBRAMONIAM P, 1509 MAIN ST, 67357-3332  
 421-0600 49531650131  
 39 M 49531 74 IM

PAULS MD, DANIEL N, PO BOX 1014, 67357-1014  
 421-1431 1902710856  
 45 M 1902 72 IM

ROTHSTEIN MD, TERRY B, 220 N 32ND ST, 67357-2226  
 421-5900 1606691072  
 43 M 1606 76 OPH

SATYA-MURTI MD, SATYA, PO BOX 377, 67357-0377  
 421-8884 49516650078  
 44 M 49516 0 N

SHARMA MD, ARUN L, 1509 MAIN ST, 67357-3332  
 421-0600 49607690056  
 46 F 49503 77 FP

TANANUNKUL MD, URAIWAN, PO BOX 256, 67357-0256  
 421-2460 89101750052  
 51 M 89101 0 PD

TANG MD, CHANTRA, PO BOX 1054, 67357-1054  
 421-2460 89102710321  
 47 F 89104 82 PD

TANG MD, SAROHD, PO BOX 1054, 67357-1054  
 421-2460 89102690550  
 43 M 89102 76 OBG

VERMA MD, ASHA, 400 KATY, 67357-2400  
 421-2700 49530630136  
 37 F 49530 76 PD

WELCH MD, JAMES R, 400 KATY AVE, 67357-2400  
 421-2424 0  
 52 M 3901 0 PATH

### PITTSBURG — 316 (Crawford-Cherokee County Medical Society)

ARMSTRONG MD, HAROLD J, 207-208 PROFESSIONAL BUILDING, 66762-0000  
 232-2600 1902680035  
 40 M 1902 69 ORS

BENA MD, JAMES, 405 WEBSTER, 66762-5542  
 0 3005360055  
 12 M 3005 38 OO

BERKEY MD, VERNON A, NATL BANK BLDG, 66762-0000  
 231-7650 1902430080  
 18 M 1902 43 R

BIERLEIN MD, KENNETH J, 812 S CATALPA, 66762-5502  
 0 1606330169  
 6 M 1606 33 OO

CARLSON MD, MARK D, 909 CENTENNIAL, 66762-6600  
 231-1650 1902870314  
 61 M 1902 89 IM

COOMER MD, TYLER E, 801 ELMWOOD LN, 66762-5524  
 0 2101590189  
 30 M 2101 65 OO

ERICKSON MD, CLARENCE W, 812 ELMWOOD LN, 66762-5524  
 231-7400 1902330140  
 6 M 1902 33 IM

GOBAR MD, IBRAHIM A, CENTENNIAL & ROUSE, 66762-0000  
 232-0348 11801670077  
 40 M 11801 0 HEM

GOMETZ MD, MODESTO S, PO BOX 1746, 66762-1746  
 231-2490 72601660025  
 35 M 72601 71 PD

GRIMALDI MD, GARY A, PITTSBURG ST U STU HLTH CNTR, 66762-5880  
 235-4452 1902741964  
 49 M 1902 76 OBG

HOLSINGER MD, DONALD M, 1015 MT CARMEL PL, 66762-6604  
 231-5900 1902640394  
 38 M 1902 65 IM

HUEBNER MD, ROBERT STEPHAN, 1015 E MT CARMEL PL, 66762-6604  
 231-6160 1606670474  
 42 M 1606 78 GPVS

HUERTER MD, DAVID F, 909 CENTENNIAL, 66762-6600  
 231-1650 1902720614  
 46 M 1902 75 IM

KOEHN MD, DANIEL J, #3 MED CENTER CIR, 66762-0000  
 235-1043 1902880948  
 61 M 1902 91 FP

LANCE MD, RAYMOND W, 604 SYCAMORE LN, 66762-5539  
 0 1902470359  
 22 M 1902 47 OO

LEFFLER MD, PAUL B, 309 WINWOOD, 66762-5647  
 0 1902400318  
 2 M 1902 40 OO

MCDANIEL MD, R JAMES, PO BOX 1746, 66762-1746  
 231-2490 1902821178  
 50 M 1902 85 PD

MILLER MD, EARL E, 1803 S COLLEGE TER, 66762-0000  
 0 1902370427  
 13 M 1902 37 OO

ODGERS MD, RODNEY K, 909 CENTENNIAL, 66762-6600  
 231-4300 1902741697  
 49 M 1902 75 IM

PAPP JR MD, S DEAN, 906 MILL RD, 66762-6675  
 231-7650 1902720908  
 46 M 1902 80 DR

PARSI MD, MANUTCHEHR, 909 CENTENNIAL, 66762-6600  
 231-3770 51701640393  
 38 M 51701 74 GYN

POGSON MD, GEORGE W, RR 3 BOX 23, 66762-9300  
 0 1902470464  
 24 M 1902 47 OO

POWELL MD, TIMOTHY J, PO BOX 565, 66762-0565  
 232-0127 0  
 52 M 1902 85 AN

RAMIREZ MD, AUGUSTO H, 909 CENTENNIAL STE 3, 66762-6600  
 231-6280 26407580019  
 32 M 26407 71 GS

RAMIREZ MD, IRENE P, 909 CENTENNIAL, 66762-6600  
 231-6280 74801671601  
 43 F 74801 71 PD

RETHORST MD, RICHARD D, #3 MEDICAL CENTER CIR, 66762-0000  
 235-1181 1902882282  
 61 M 1902 0 FP

SANDNESS MD, KATHLEEN M, 1015 MT CARMEL, 66762-6604  
 231-3113 1902881448  
 56 F 1902 89 IM

SCHLEMMER MD, ROGER B, 1003 S BROADWAY, 66762-5859  
 231-6380 1902680884  
 37 M 1902 68 OPH

SEARLE MD, ROBERT E, 101 N PINE ST, 66762-4743  
 231-7164 5101670611  
 37 M 5101 86 OPH

SEGLIE MD, F RONALD, #3 MED CENTER CIR, 66762-0000  
 232-2890 1902690944  
 43 M 1902 70 FP

TAWIL MD, ELIAS ADIB, 2701 S ROUSE, 66762-6651  
 231-0850 91502760012  
 52 M 33004 83 U

TWEET MD, FREDRICK A, RR 5 BOX 196, 66762-9036  
 231-6100 1602660652  
 39 M 1602 68 PATH



WHITE D O, JOHN P, CENTENNIAL & ROUSE, 66762-0000  
 232-2270 1875720097  
 43 M 1875 76 P

YAGHMOUR MD, TALAAT E, 2701 S ROUSE, 66762-6651  
 231-0850 33004640018  
 40 M 33002 72 U

**PLAINVILLE — 913**  
*(Central Kansas Medical Society)*

KELLY D O, MARK A, 300 S COLORADO, 67663-2505  
 434-4602 3979790383  
 50 M 3979 90 GP

PEDERSON MD, ARNOLD M, 202 COLORADO, 67663-2106  
 0 1902510601  
 22 M 1902 51 OO

**PLEASANTON — 913**  
*(Anderson County Medical Society)*

JUSTUS MD, WILLIAM J, PO BOX 407, 66075-0407  
 352-6134 1902550611  
 29 M 1902 55 FP

**PRATT — 316**  
*(Ninnescah Medical Society)*

AMBLER MD, CARL D, PO BOX 364, 67124-0364  
 672-6476 1902570019  
 31 M 1902 57 R

BARKER MD, PATRICK N, PO BOX 869, 67124-0869  
 672-7411 1902710040  
 45 M 1902 72 GS

BLACK MD, CYRIL V, RR 2, 67124-9802  
 0 4802300021  
 5 M 4802 31 OO

BLOOM MD, L THEIL, 543 TERRACE DR, 67124-1355  
 672-9297 1902570051  
 32 M 1902 57 R

BRACKE D O, KURT MORGAN, 420 COUNTRY CLUB RD, 67124-3125  
 672-5983 0  
 61 M 2879 91 GP

COSTELLO MD, J W, 420 COUNTRY CLUB RD, 67124-3125  
 672-9478 3520570186  
 31 M 3520 90 OBG

FREEMAN MD, F GILES, 310 E 2ND, 67124-2718  
 672-5555 1902440557  
 18 M 1902 44 FP

FRIESEN MD, RICK W, 420 COUNTRY CLUB RD, 67124-3125  
 672-7422 1902860572  
 59 M 1902 0 FP

ROSEN MD, CARL H, PO BOX 8564, 67124-8564  
 672-9454 4812721114  
 46 M 4812 84 U

SUITER MD, DANIEL JAY, 420 COUNTRY CLUB RD, 67124-3125  
 672-7411 1902711097  
 44 M 1902 74 GE

**PROTECTION — 316**  
*(Iroquois County Medical Society)*

GLENN MD, LYLE G, PO BOX 447, 67127-0447  
 0 1606400418  
 12 M 1606 40 OO

**QUINTER — 913**  
*(Northwest Kansas Medical Society)*

HIESTERMAN MD, HERMAN W, PO BOX 425, 67752-0425  
 0 1902510318  
 23 M 1902 51 OO

**RANSOM — 913**  
*(Central Kansas Medical Society)*

MCLAIN MD, KENNETH, BOX 247, 67572-0247  
 731-2295 1902460388  
 21 M 1902 46 FP

**RILEY — 913**  
*(Riley County Medical Society)*

WALDROP D O, RICHARD J, PO BOX 68, 66531-0068  
 485-2549 2878800446  
 45 M 2878 91 FP

**RUSSELL — 913**  
*(Central Kansas Medical Society)*

MERKEL MD, EARL D, PO BOX 473, 67665-0473  
 483-2178 1902570604  
 32 M 1902 57 FP

STARKEY MD, JERALD L, RT 2 BOX 148, 67665-9418  
 0 1902561044  
 30 M 1902 56 OO

SWANN MD, CLAIR L, 112 W 6TH, 67665-2720  
 483-4212 1902390541  
 13 M 1902 39 IM

WHITE MD, FAGAN N, 356 W 5TH, 67665-2610  
 0 702360447  
 11 M 702 37 OO

**SABETHA — 913**  
*(Northeast Kansas Medical Society)*

KENNALLY MD, KEVIN P, PO BOX 247, 66534-0247  
 284-2141 1902780927  
 53 M 1902 81 FP

WENGER MD, GREGG D, PO BOX 247, 66534-0247  
 284-2141 1902781958  
 54 M 1902 81 PD

YULICH MD, JOHN O, PO BOX 227, 66534-0227  
 284-2125 1902591016  
 33 M 1902 61 FP

**SALINA — 913**  
*(Saline County Medical Society)*

ALLRED MD, CHARLES T, PO BOX 1757, 67402-1757  
 767-5126 1902780021  
 53 M 1902 80 FP

ALSOP MD, WILLIAM R, 737 E CRAWFORD ST, 67401-5102  
 827-7261 1902770042  
 52 M 1902 78 GE

ANDERSON MD, JODY, PO BOX 260, 67402-0260  
 827-7261 1902590010  
 32 F 1902 64 IM

BAXTER MD, W REESE, PO BOX 1847, 67402-1847  
 825-8221 1902730083  
 47 M 1902 74 FP

BELL MD, MARK G, 909 E WAYNE, 67401-2201  
 823-7225 1902751595  
 50 M 1902 77 ENT

BLOMQUIST MD, GLENDA L H, 1508 E IRON AVE, 67401-3236  
 827-1193 1902852031  
 56 F 1902 86 P

BOSSEMAYER II MD, CHARLES H, PO BOX 1847, 67402-1847  
 825-8221 1902780200  
 49 M 1902 84 FP

BROWN MD, ROBERT WAYNE, 910 MARYMOUNT RD, 67401-8428  
 0 1902550174  
 23 M 1902 55 OO

BRUNGARDT MD, BERNARD A, 400 E BELOIT AVE, 67401-6216  
 0 3006460045  
 21 M 3006 46 OO

BURNETT DO, LARRY E, PO BOX 6080, 67401-0080  
 823-7470 2879840425  
 58 M 2879 85 FP

BYERS MD, JONELL, 833 ELMHURST BLVD, 67401-7405  
 823-8140 1902781991  
 53 F 1902 79 D

CATHCART-RAKE MD, WILLIAM F, BOX 260, 67402-0260  
 827-7261 1902740895  
 48 M 1902 75 IM

CLARK MD, DAVID H, PO BOX 1847, 67402-1847  
 825-8221 1902620091  
 36 M 1902 63 FP

CONNER MD, BRIAN, 1518 E IRON AVE, 67401-3277  
 825-2020 1902720231  
 46 M 1902 73 OPH

COOPER MD, JAMES L, PO BOX 2027, 67402-2027  
 823-7201 1902820376  
 56 M 1902 83 PATH

COSSETTE MD, JERROLD E, 909 E WAYNE AVE, 67401-2201  
 823-7225 1902751781  
 46 M 1902 76 ENT

COVERT MD, THOMAS J, 737 E CRAWFORD ST, 67401-5102  
 827-7261 1902710244  
 45 M 1902 72 PD

CULTRON MD, FRANK T, 837 FAIRDALE RD, 67401-8430  
 0 1643380214  
 10 M 1643 47 OO

D'SOUZA MD, BISMARCK C, PO BOX 2327 67402-2327  
 827-9526 49501680370  
 45 M 49501 78 R

DENNIS MD, DAVID T, PO BOX 260, 67402-0260  
 827-7261 1902780501  
 53 M 1902 78 IM

DETURK MD, DWAYNE L, PO BOX 2327, 67402-2327  
 827-9526 3005830272  
 51 M 3005 84 R

DRAEMEL MD, H RICHARD, 2203 EDGEHILL RD, 67401-1614  
 827-0307 1902530246  
 18 M 1902 53 OTO

DREHER MD, HENRY S, PO BOX 260, 67402-0260  
 827-7261 1902430284  
 18 M 1902 43 IM

EATON MD, GLEN E, 4353 E NORTH ST, 67401-9624  
 0 1902540268  
 28 M 1902 54 OO

EATON MD, LESLIE F, RR 1 BOX 346, 67401-9801  
 0 1902320152  
 6 M 1902 34 OO

ELLISON MD, PAUL D, 1499 E IRON AVE, 67401-3233  
 825-7271 2105600421  
 35 M 2105 67 OPH

FERGUSON DO, ELAINE L, PO BOX 1847, 67402-1847  
 825-5717 2878830299  
 0 F 2878 0 IM

FREEMAN MD, RAYMOND S, 1901 E IRON AVE, 67401-3428  
 0 702500192  
 20 M 702 59 OO

FULLEN MD, JERYL G, 523 S SANTA FE AVE, 67401-4145  
 823-7213 401680268  
 43 M 401 76 ORS

GANS MD, FREDERICK A, 950 S 11TH, 67401-4818  
 0 2834460354  
 22 M 2834 51 OO

GARLOW MD, WILLIAM B, PO BOX 2327, 67402-2327  
 827-9526 1902820554  
 55 M 1902 87 R

GRANT MD, MICHAEL D, 1001 S OHIO ST, 67401-6212  
 827-6453 1902790752  
 51 M 1902 82 FP

GRIFFITH MD, FRANK H, 1493 E IRON AVE, 67401-3233  
 827-0488 4813750321  
 45 M 4813 76 OPH

GUNN MD, MARVIN R, 2142 EDGEHILL RD, 67401-3520  
 0 3901540291  
 28 M 3901 63 OO

HAMILL MD, J MARK, 1508-B E IRON AVE, 67401-3236  
 827-1193 1902872058  
 59 M 1902 0 P

HAMPEL MD, KEVIN G, 200 S SANTA FE AVE STE #3, 67401-1615  
 823-6832 1902880671  
 58 M 1902 92 AN

HARBIN MD, GARY L, 523 S SANTA FE AVE, 67401-4145  
 823-7213 1902752109  
 50 M 1902 77 ORS

HASSLER MD, RANDY D, 645 E IRON AVE, 67401-2697  
 827-9635 1902710465  
 45 M 1902 78 U

HODGES MD, MERLE A, 850 S SANTA FE AVE, 67401-4950  
 825-9024 1902580421  
 34 M 1902 66 OBG

HODGES MD, MERLE J, 655 S SANTA FE AVE, 67401-4147  
 827-5451 1902830843  
 58 M 1902 84 OBG

HOUSE MD, R E, PO BOX 2327, 67402-2327  
 827-9526 1902810427  
 54 M 1902 82 DR

HUTCHINSON MD, DIRK T, 135 E CLAFLIN AVE, 67401-6162  
 827-9631 3901740541  
 48 M 3901 78 IM

JASTER MD, PAUL J, PO BOX 1757, 67402-1757  
 825-7251 1902830941  
 57 M 1902 84 FP

JERKOVICH MD, GEORGE S, 1508 E IRON AVE, 67401-3236  
 827-1193 1902830959  
 57 M 1902 87 P

KELLERMAN MD, RICK, PO BOX 1757, 67402-1757  
 825-7251 1902780919  
 54 M 1902 81 FP

KNOX MD, JEFFREY B, 737 E CRAWFORD ST, 67401-5102  
 827-7261 1902841039  
 57 M 1902 85 OBG

KREHBIEL MD, MARK A, PO BOX 1847, 67402-1847  
 825-8221 1902742162  
 49 M 1902 76 FP

KRUCKEMYER MD, ALAN L, 645 E IRON AVE, 67401-2697  
 823-2215 1103710291  
 45 M 1103 77 ORS

LAWRENCE MD, LINDA M, 929 ELMHURST BLVD, 67401-7401  
 823-1600 84802821111  
 57 F 4802 86 OPH

LAWRENCE MD, MICHAEL K, 737 E CRAWFORD AVE, 67402-0000  
 827-7255 2802840520  
 58 M 2802 0 IM

LIVINGSTON MD, CHARLES E, 400 E IRON AVE, 67401-2635  
 823-9166 1611570801  
 32 M 1611 64 GS



MACY MD, NORMAN E, PO BOX 2027, 67402-2027  
827-4053 1902600449  
35 M 1902 64 PATH

MACY MD, TED L, PO BOX 260, 67402-0260  
827-7261 1902710660  
43 M 1902 73 GS

MANGUOGLU MD, ALI B, 521 S SANTA FE AVE, 67401-4145  
823-1032 90205760015  
53 M 90205 85 N

MARCHBANKS MD, DONALD L, PO BOX 1007, 67402-1007  
0 1902510474  
24 M 1902 51 OO

MARSHALL MD, GEORGE W, PO BOX 1845, 67402-1845  
825-9024 1902700745  
44 M 1902 71 OBG

MARTIN MD, OLIVER L, 715 E REPUBLIC, 67401-5334  
0 1902370371  
8 M 1902 38 OO

MATTHEWS MD, EARL H, 135 E CLAFLIN AVE, 67401-6162  
827-9631 1902742308  
49 M 1902 78 GS

MAXWELL MD, GORDON E, 135 E CLAFLIN AVE, 67401-6162  
827-9631 1902550778  
29 M 1902 55 OBG

MCCRAE MD, SPENCER C, 655 GUERNSEY DR, 67401-7400  
0 3509430810  
18 M 3509 52 OO

MILLER MD, ELDEN V, 1928 RIDGELEA, 67401-3652  
0 1902441031  
19 M 1902 44 OO

MOORE MD, JULIE A, 338 N FRONT ST, 67401-2038  
823-7201 1902861234  
56 F 1902 0 PATH

MOWERY MD, WILLIAM E, PO BOX 260, 67402-0260  
827-7261 1902470391  
23 M 1902 47 GS

NEUMANN MD, JAMES W, 600-E S SANTA FE AVE, 67401-4148  
825-5041 1902560820  
24 M 1902 83 N

NICKELL MD, WENDELL K, 400 E IRON AVE, 67401-2635  
823-9166 1606511201  
26 M 1606 51 TS

NULL MD, WILLIAM G, 135 E CLAFLIN AVE, 67401-6162  
827-9631 102570413  
31 M 102 66 PD

PALMER MD, GERALD K, 1952 RIDGELEA DR, 67401-3652  
0 1803530765  
24 M 1803 61 OO

PEREZ-TAMAYO MD, CLAUDIA, 139 N PENN, 67401-3044  
827-5591 1611812431  
57 F 1611 0 RO

PETERSON MD, DAVID A, 645 E IRON AVE, 67401-2697  
823-2215 3005821095  
49 M 3005 91 ORS

PETERSON MD, JAMES E, PO BOX 2327, 67402-2327  
827-9526 1902781451  
53 M 1902 82 DR

REECE MD, RICHARD J, 502 BEECHWOOD, 67401-3618  
0 1902490554  
23 M 1902 49 OO

RICHARDS MD, JON F, 135 E CLAFLIN AVE, 67401-6162  
827-9631 1902752664  
50 M 1902 0 IM

RODERICK MD, JAMES E, 1706 UPPER MILL TER, 67401-2697  
0 1902470511  
23 M 1902 47 OO

ROMEISER MD, REX S, 645 E IRON AVE, 67401-2697  
827-9635 1902670854  
41 M 1902 68 U

ROSALES MD, J EDGAR, 737 E CRAWFORD ST, 67401-5102  
827-7261 17601740061  
0 M 0 0 PD

SCHMIDT MD, RAMON WARNER, 400 E IRON AVE, 67401-2635  
823-9166 1902650802  
39 M 1902 66 GS

SCOTT MD, CHESTER E, 858 S 11TH, 67401-4861  
0 1902510725  
23 M 1902 51 OO

SEATON MD, ROBERT D, PO BOX 260, 67402-0260  
827-7261 1902781664  
49 M 1902 83 NEP

SEBREE MD, STEVEN G, PO BOX 260, 67402-0260  
827-7261 1902731047  
47 M 1902 74 OBG

SHAFER MD, JAMES J, PO BOX 676, 67402-0676  
827-0346 1902851603  
57 M 1902 0 FP

SLOO MD, MILO G, 645 E IRON AVE, 67401-2697  
823-2215 1902670889  
41 M 1902 68 ORS

SMITH MD, BOYD E, PO BOX 2027, 67402-2027  
827-4053 3005720841  
46 M 3005 78 PATH

SMITH MD, DAVID E, PO BOX 260, 67402-0260  
827-7261 1902761272  
50 M 1902 77 GS

SMITH MD, JOHN D, 1318 PARKWOOD DR, 67401-6616  
0 3901510554  
22 M 3901 52 OO

STOSKOPF MD, LAWRENCE E, 2413 EDGEHILL, 67401-1615  
823-9498 1902721084  
39 M 1902 73 AN

STUEWE MD, BRAD R, PO BOX 260, 67402-0260  
827-7261 1902742022  
49 M 1902 75 IM

WAGENBLAST MD, HOWARD R, PO BOX 260, 67402-0260  
0 1902490694  
21 M 1902 49 OO

WATERS MD, CLARENCE N, 833 MANOR RD, 67401-5134  
0 2834481114  
13 M 2834 60 OO

WEBER MD, ROBERT W, 135 OVERHILL RD, 67401-3580  
0 1902490716  
26 M 1902 49 OO

WEDEL MD, ALAN K, PO BOX 6080, 67401-0080  
823-7470 1902821933  
56 M 1902 86 FP

WOODALL MD, DENNIS C, PO BOX 1847, 67402-1847  
825-8221 1902831971  
55 M 1902 84 FP

## SATANTA — 316 (Southwest Kansas Medical Society)

JABEL MD, JUVENAL T, PO BOX 247, 67870-0247  
649-2771 74809680111  
43 M 74809 79 IM

TADURAN MD, VIRGILIO, PO BOX 547, 67870-0000  
679-2771 74810690228  
43 M 74810 69 PATH

## SCOTT CITY — 316 (Southwest Kansas Medical Society)

DUNN MD, DANIEL R, 202 S COLLEGE ST, 67871-1298  
872-2187 1902740232  
49 M 1902 75 FP

HOPKINS JR MD, B MORRISON, 804 CRESCENT AVE, 67871-1321

0	1902530408			
23	M	1902	53	OO

ROSIN MD, ROBERT L, 202 S COLLEGE ST, 67871-1298

872-2187	1902851514			
58	M	1902	86	IM

### SEDAN — 316

(Southeast Kansas Medical Society)

TAYLOR MD, ELMER W, 120 W OSAGE BOX 8, 67361-1518

0	512570879			
28	M	512	62	OO

WALKER MD, WILLIAM K, 417 N MONTGOMERY, 67361-1023

0	1902450722			
18	M	1902	45	OO

### SENECA — 913

(Northeast Kansas Medical Society)

BERKLEY MD, NORMAN W, 15 S 5TH ST, 66538-1905

336-2128	1902630054			
31	M	1902	64	FP

LUEGER D O, JAMES J, 713 MAIN ST, 66538-1931

336-6107	2878781018			
51	M	2878	0	GP

MENZEL MD, THOMAS E, 511 WALNUT, 66538-2053

336-6277	1902821241			
52	M	1902	0	GS

SHETLAR D O, JOHN M, 201 N 6TH ST, 66538-1791

336-6113	0			
62	M	2878	92	GP

### SHAWNEE MISSION — 913

(Johnson County Medical Society)

ADLI MD, CEMAL M, 10600 QUIVIRA RD STE 230, 66215-2311

541-8897	90201540517			
28	M	90201	86	ORS

AHNEMANN MD, JANET L, 9119 W 74TH ST STE 150, 66204-0000

362-5510	1902860017			
57	F	1902	90	FP

ALLEN MD, JAMES V, 5520 COLLEGE BLVD #410, 66211-1600

451-5934	2002780014			
46	M	2002	0	D

ALLEN MD, MAX S, 5103 W 96TH TER, 66207-3320

0	1902370010			
11	M	1902	37	OO

ALTENBERND MD, ELVIN C, 7319 W 81ST ST, 66204-3778

648-2010	1902540012			
26	M	1902	54	FP

AMADO MD, MERCEDES C, 6950 SQUIBB RD #200, 66202-3259

737-4400	2803830013			
55	F	2803	88	A

ANDERSON MD, ALLISON H, 8800 W 75TH STE 220, 66204-4001

384-5500	1902850755			
59	F	1902	91	PD

ANDERSON MD, WILLIAM A, 2508 W 71ST, 66208-0000

236-7288	2846760191			
50	M	2846	83	EM

ARNOLD MD, L KIRK, 9100 W 74TH ST, 66204-4019

676-2351	2803750036			
49	M	2803	91	PATH

ARNSPIGER II MD, RICHARD C, 8800 W 75TH #115, 66204-4001

262-9201	1902820031			
56	M	1902	0	GPVS

ATHON MD, MERRILL D, 6806 W 83RD ST, 66204-3999

642-4242	1902540047			
24	M	1902	54	FP

AUSTENFELD MD, JENNIFER, PO BOX 2923, 66201-1323

676-2340	1902830169			
57	F	1902	89	PATH

BADEEN II MD, LOUIS JOHN, 10600 QUIVIRA RD #460, 66215-2312

491-5179	2846740026			
49	M	2846	78	OPH

BAKER MD, WILLIAM STEVEN, 7700 W 63RD ST #209, 66202-3057

262-1843	702730066			
47	M	702	76	P

BALDWIN MD, THOMAS F, 8901 W 74TH STE 21, 66204-0000

722-0080	1902830142			
56	M	1902	84	IM

BANSAL MD, ROOPA O, 5600 W 95TH STE 105, 66207-2968

381-6765	49504560146			
37	F	49504	80	FP

BANSAL MD, SATISH C, 8901 W 74TH ST #147, 66204-2299

384-2220	49541610048			
38	M	49541	74	ORS

BAPTIST MD, JEREMY E, 5811 OUTLOOK ST, 66202-2792

432-0625	2846780729			
40	M	2846	79	A

BARE II MD, CHARLES E, 8901 W 74TH ST #353, 66204-2298

677-2460	1902690057			
43	M	1902	70	U

BARELLI MD, PAT A, 5609 MISSION DR, 66208-1135

0	1902440077			
19	F	1902	44	OO

BARKER MD, ELIZABETH B, 4121 W 83RD STE 123, 66208-5316

381-6669	4706550122			
30	F	4706	66	P

BARNETT JR MD, THOMAS E, 10600 QUIVIRA STE 240, 66215-2311

541-3355	2846750251			
52	M	1902	80	PD

BARNETT MD, THEODORE M, 6115 W 54TH TER, 66202-1634

234-3668	0			
0	M	0	0	

BARNHART MD, RONALD J, 9119 WEST 74TH ST #268, 66204-2202

831-2334	2501680136			
41	M	2501	69	OBG

BARR MD, RICHARD N, 7301 MISSION STE 119, 66208-3005

432-4366	1902570043			
32	M	1902	57	OPH

BARRICK MD, BRUCE, PO BOX 2923, 66201-1323

676-2340	1902650021			
39	M	1902	66	PATH

BATTY MD, LARRY H, 9119 W 74TH ST #268, 66204-2202

831-2334	1902760110			
51	M	1902	77	OBG

BAUER MD, LAFE W, 4818 W 80TH, 66208-5025

0	1902490023			
20	M	1902	49	OO

BAUER MD, LAIRD A, 8800 W 75TH STE 300, 66204-4001

722-4240	1902860106			
56	M	1902	89	IM

BEAMON MD, RICHARD F, 8000 W 110TH STE 105, 66210-2315

469-1411	2803730035			
47	M	2803	91	EM

BECKER MD, NANCY J, 5520 COLLEGE BLVD #350, 66211-1600

661-9980	1902820139			
48	F	1902	87	IM

BEEZLEY MD, MICHAEL J, 8800 W 75TH STE 115, 66204-4001

262-9201	1902730105			
47	M	1902	74	GPVS

BELL MD, D W, 7000 W 121ST ST STE 100, 66209-2010

469-1020	1902680078			
42	F	1902	69	OPH

BELT MD, ROBERT J, 12000 W 110 #400, 66210-3937

469-8023	702710073			
45	M	702	75	ON



BELZER MD, EDWARD G, 10600 QUIVIRA STE 330, 66215-2312  
 541-3300 3005620081  
 36 M 3005 67 PD

BICHLMEIER MD, FRANKLIN G, 8901 W 74TH ST #272, 66204-2202  
 362-0500 1902580081  
 33 M 1902 59 GS

BISHOP MD, FRANCIS E, 3208 W 83 TER, 66206-1304  
 0 1902450064  
 20 M 1902 45 OO

BISHOP MD, HENRY R, 10600 QUIVIRA STE 320, 66215-2311  
 541-3200 4813790128  
 53 M 4813 82 OBG

BLETZ MD, DONALD B, 10550 QUIVIRA STE 510, 66215-2305  
 492-6200 5104580116  
 28 M 5104 72 IM

BOHN MD, WILLIAM W, 10550 QUIVIRA STE 350, 66215-2308  
 888-9893 0  
 55 M 0 0 ORS

BOLES MD, J MICHAEL, 5949 NIEMAN RD, 66203-2907  
 631-1300 1902610088  
 35 M 1902 62 FP

BOTTS MD, LARRY D, 8901 W 74TH ST #348, 66204-2243  
 432-8000 3005790092  
 52 M 3007 0 PUD

BOWLIN D O, SCOTT E, 7301 MISSION RD, 66208-0000  
 432-2000 2878880261  
 58 M 2878 0 FP

BROWN MD, MICHAEL D, 4500 COLLEGE BLVD STE 304, 66211-1760  
 338-0400 3901850177  
 59 M 3901 91 CHP

BROWN MD, WILLIAM R, 8717 ROSEWOOD DR, 66207-2223  
 0 1902480079  
 23 M 1902 48 OO

BROXTERMAN MD, STEVEN JOSEPH, 9119 W 74TH ST #150, 66204-2201  
 362-5510 1902760217  
 51 M 1902 77 FP

BRUN MD, MICHAEL E, PO BOX 29194, 66201-9194  
 469-0094 2802810141  
 55 M 2802 86 DR

BRUNING MD, DANIEL L, 10540 BARKLEY ST #70, 66212-1842  
 268-0500 2834850105  
 56 M 2834 84 AN

BRUNING MD, ROGER MARION, 8340 MISSION RD #101, 66206-1362  
 384-0745 1902760225  
 48 M 1902 79 FP

BUBB MD, STEPHEN K, 8901 W 74TH ST #3, 66204-2240  
 362-0031 1902740135  
 48 M 1902 76 ORS

BUCKMAN MD, MARTIN SPALDING, 10600 QUIVIRA STE 240, 66215-2311  
 541-3355 2803760066  
 49 M 2802 75 IM

BURES JR MD, GEORGE J, 8700 BOURGADE STE 2, 66219-1440  
 599-5500 1902850268  
 58 M 1902 90 FP

BURGER MD, PAUL B, PO BOX 3278, 66203-0278  
 631-6114 2834500101  
 25 M 2834 50 FP

BUSER MD, WILLIAM D, 12000 W 110TH STE 200, 66210-3937  
 469-1477 1902800146  
 55 M 1902 83 GE

BUTRICK MD, CHARLES W, 10600 QUIVIRA STE 320, 66215-2311  
 541-3200 1902800154  
 55 M 1902 88 OBG

CALKINS MD, LARRY L, 5635 SUWANEE, 66205-3307  
 0 1902430187  
 18 M 1902 43 OO

CAMPBELL MD, LINDA H, 6208 REINHARDT DR, 66205-3337  
 722-4376 1902840806  
 48 F 1902 0 ON

CARRIKER MD, CRISTINE G, 8901 W 74TH ST #248, 66204-2202  
 384-4990 1902881618  
 61 F 1902 92 OBG

CASTEEL MD, CHARLES K, 8901 W 74TH ST #32, 66204-2254  
 831-1003 3901590141  
 34 M 3901 64 U

CATTANEO MD, ERNEST A, 8901 W 74TH ST #149, 66204-2262  
 262-3930 1902650110  
 39 M 1902 66 IM

CEDERLIND MD, CRANSTON JAY, 8901 W 74TH ST #36, 66204-2253  
 236-6455 1902710198  
 45 M 1902 72 OBG

CHERAY MD, JAMES A, 10600 QUIVIRA STE 210, 66215-0000  
 541-3340 1902902135  
 62 M 1902 92 IM

COHEN MD, ROBERT A, 8201 MISSION RD #202, 66208-5212  
 642-2100 2803640036  
 39 M 2803 70 PD

COLEMAN MD, ROBERT L, 8901 W 74TH ST #1, 66204-2240  
 362-0100 4113660193  
 41 M 4113 79 PS

COOLEY MD, DAVID A, 5520 COLLEGE STE 350, 66211-1600  
 661-9980 2802660131  
 40 M 2802 72 RHU

COOPER MD, JACK R, 5300 MISSION RD, 66205-2717  
 0 3840430251  
 17 M 3840 52 OO

CORDELL MD, LARRY D, 12301 W 106TH ST STE 100, 66215-2292  
 888-2800 0  
 41 M 1902 90 ORS

COULTER MD, HENRY F, 4203 W 151 ST, 66224-9758  
 0 1902510113  
 23 M 1902 51 OO

COULTER MD, THOMAS B, 7504 ANTIOCH RD, 66204-2622  
 341-3100 1205640165  
 38 M 1205 72 OPH

COX JR MD, IRA, 5829 WOODSON PO BOX 975, 66201-0975  
 722-1100 1902490180  
 19 M 1902 49 FP

COX MD, GLENDON G, 10017 MACKEY CIR, 66212-3461  
 541-5384 1902800243  
 55 M 1902 84 DR

DAVIA MD, JAMES E, 10550 QUIVIRA STE 510, 66215-2305  
 492-6200 1611620361  
 37 M 1611 85 CD

DEITZ MD, MICHAEL R, 5700 BROADMOOR ST #912, 66202-2492  
 432-0212 4101580216  
 32 M 4101 62 OPH

DEMCHUK MD, ROXOLANA J, 10540 BARKLEY #70, 66212-1842  
 642-4900 0  
 51 F 5605 91 AN

DENISON MD, TERRY R, 5811 OUTLOOK ST, 66202-2792  
 432-0625 1902560307  
 29 M 1902 56 A

DENNIS MD, MICHAEL W, PO BOX 29194, 66201-9194  
 676-2310 2846810156  
 57 M 2846 83 DR

DERRINGTON MD, KENNETH L, 4601 W 109TH STE 310, 66211-1315  
 491-6464 1902710287  
 44 M 1902 72 FP

DIEHL MD, ANTONI M, 13106 W 75TH TERR, 66216-3002  
 0 0  
 24 M 2604 53 OO

DOCKHORN MD, ROBERT J, 5300 W 94TH TERR, 66207-2504  
 381-4674 1902600236  
 34 M 1902 61 PDA

DONLEY MD, JAMES L, 8340 MISSION RD STE 201, 66206-1362  
 648-2892 1902720347  
 46 M 1902 73 P

DORZAB MD, LINDA L, 5520 COLLEGE BLVD STE 365, 66211-1600  
362-0000 2846840870  
47 F 2846 90 IM

DRAHOTA MD, LAWRENCE J, 10600 QUIVIRA #400, 66215-2312  
541-2340 3005820391  
56 M 3005 83 GS

DRAKE MD, CYNTHIA K, 9119 W 74TH ST #300, 66204-2277  
677-1500 2846810181  
57 F 1902 83 OBG

DRASIN MD, DENA K, 7301 MISSION RD STE 328, 66208-3005  
362-1444 2002800341  
40 F 2002 85 CHP

DREILING MD, ROGER J, 8901 W 74TH ST #21, 66204-2245  
722-0080 1902780552  
51 M 1902 79 CD

DUCKETT II MD, THOMAS G, 7000 W 121 ST #100, 66209-2010  
345-8868 1902670145  
41 M 1902 68 OPH

DUDGEON MD, MAUREEN, 8800 W 75TH #100, 66204-4001  
362-2035 1902770417  
51 F 1902 78 IM

DUNCAN MD, KIRK A, 8800 W 75TH STE 115, 66204-4001  
474-9353 1902780561  
53 M 1902 83 NEP

DYCK MD, ERIC LEE, 5799 BROADMOOR ST 2ND FL, 66202-2408  
722-5000 1902770433  
52 M 1902 80 FP

EDWARDS-GARLAND MD, SHELLEY J, 8800 W 75TH STE 101, 66204-0000  
432-2208 0  
58 F 1902 91 IM

ELLIS MD, S CHRISTOPHER, PO BOX 23548, 66223-0548  
373-0263 91707710051  
47 M 91707 85 AN

ELLIS MD, HOWARD D, 10550 QUIVIRA STE 410, 66215-2304  
541-0990 1902780579  
53 M 1902 89 OBG

EMMOTT MD, DAVID F, 8901 W 74TH ST #32, 66204-2254  
831-1003 3901790476  
53 M 3901 81 U

ENDERS MD, WRAY, 9034 COTTONWOOD DR STE 2, 66215-5408  
0 1902360138  
2 M 1902 36 OO

ESRIG D O, HAROLD L, 8132 SAGAMORE, 66206-1233  
0 2878600013  
30 M 2878 62 OO

ETZENHouser III MD, RUSSELL D, 10600 QUIVIRA STE 330, 66215-2312  
541-3300 1902590273  
34 M 1902 64 PD

EVANS MD, CAROL ANN, 5520 COLLEGE BLVD STE 365, 66211-1600  
362-0000 2846780222  
54 F 2846 82 IM

FAERBER MD, THOMAS H, 4601 W 109TH ST, 66211-1318  
469-8895 2846901046  
58 M 2846 91 MFS

FINLEY MD, BRENT E, 10600 QUIVIRA #470, 66215-2312  
588-6250 1902790639  
52 M 1902 81 MFM

FRANCISCO MD, CLARENCE L, 3509 W 85TH, 66206-1350  
0 1902340145  
9 M 1902 34 OO

FRANKEL MD, SCOTT J, 4500 COLLEGE BLVD STE 200, 66211-1760  
491-5501 2802790387  
53 M 2802 84 A

FRIESEN MD, STANLEY R, 48 LE MANS CT, 66208-5231  
0 1902430306  
18 M 1902 43 OO

GAGE MD, BETSE M, 8800 W 75TH ST #220, 66204-4001  
384-5500 1902800375  
55 F 1902 84 PD

GALLEHUGH MD, KEITH W, 9027 BIRCH, 66207-2213  
0 1902570281  
32 M 1902 57 OO

GARCIA-FERRER MD, FRANCISCO, 10616 W 87TH ST, 66214-1651  
541-0999 27501601638  
32 M 27501 73 FP

GAUGHAN MD, MICHAEL J, PO BOX 29194, 66210-1374  
469-8998 1902741549  
49 M 1902 77 R

GERJARUSAK MD, PRAPAS, 8901 W 74TH ST #121, 66204-2201  
262-0344 89104710086  
36 M 89101 75 IM

GERWICK MD, CHARLES L, PO BOX 2923, 66201-1323  
676-2214 1902840628  
58 M 1902 91 EM

GIBBONS MD, ROBERT T, 8800 BALLENTINE, 66214-1985  
894-4050 1902680302  
43 M 1902 69 AN

GILLEN MD, BILLY A, 8802 BIRCH LN, 66207-2210  
0 1902540365  
29 M 1902 54 OO

GOERTZ MD, LEO R, 6340 ASH, 66208-1369  
0 1902520275  
22 M 1902 52 OO

GOLDBERG MD, JOSEPH P, 10561 BARKLEY #200, 66212-0000  
967-4692 3806640203  
37 M 3806 92 PD

GOLDSTEIN MD, GERALD L, 4500 COLLEGE BLVD STE 200, 66211-1760  
491-5501 16504760069  
47 M 16504 81 P

GOMEZ MD, FRANCISCO, 2020 DRURY LN, 66208-1228  
262-4077 26401400019  
15 M 26401 63 P

GOOD MD, WENDELL LISLE, 4601 W 109TH STE 212, 66211-1314  
491-9183 1902480214  
24 M 1902 48 FP

GOODWIN MD, JOHN A, 10600 QUIVIRA STE 330, 66215-2312  
541-3300 1902860645  
60 M 1902 88 PD

GRAHAM MD, BRUCE D, 4860 COLLEGE BLVD STE 209, 66211-0000  
345-2603 0  
51 M 2803 87 GS

GRASHOFF MD, JOYCE A, 11116 W 114TH, 66210-0000  
596-4180 3005800101  
59 F 3005 83 EM

GRAY MD, C K, 11020 KING, 66210-1201  
345-2622 1902753067  
48 M 1902 75 IM

GREEN MD, ANDREW J, 10550 QUIVIRA RD STE 290, 66215-0000  
894-1595 2501812806  
57 M 2501 0 IM

GRIN MD, TRUDI R, 10550 QUIVIRA STE 335, 66215-2308  
888-1888 0  
57 F 2846 86 PDO

GRUNDMEIER MD, ANNETTE M, 9119 W 74TH ST #210, 66204-2202  
432-3334 1611770916  
46 F 1611 79 PD

HACKER MD, DAVID C, 10540 BARKLEY ST #70, 66212-1842  
676-2479 1902752079  
50 M 1902 78 AN

HALL MD, MARK R, 9100 W 74TH ST, 66204-4019  
676-2214 2512860381  
60 M 2512 90 EM

HALLERAN III MD, WILLIAM J, PO BOX 29194, 66210-1374  
469-8998 1902780749  
53 M 1902 80 DR

HAMTIL MD, LAWRENCE W, 10550 QUIVIRA RD STE 460, 66215-2304  
341-3937 2803610251  
36 M 2803 69 PD



HARDIN MD, CREIGHTON A, 8229 NALL AVE, 66208-4948

0 5605430432  
18 M 5605 48 OO

HARRIS MD, LANNY W, 10550 QUIVIRA STE 350, 66215-2308

888-9893 0  
41 M 4706 0 ORS

HARRIS MD, MARGARET H, 10600 QUIVIRA STE 320, 66215-2311

541-3200 1902840725  
58 F 1902 0 OBG

HARTMAN MD, GERALD V, 6616 EL MONTE, 66208-1662

0 1902450331  
20 M 1902 45 OO

HARTONG MD, WILLIAM A, 8901 W 74TH ST #372, 66204-2200

831-9300 1902710457  
44 M 1902 72 IM

HARTY MD, JEAN R, 8747 ROSEWOOD, 66207-0000

588-5745 1902850721  
44 F 1902 87 PD

HEISLER MD, NORMAN T, 8901 W 74TH ST #269, 66204-2202

362-4040 3005800632  
55 M 3005 84 P

HEIT MD, J ANTHONY, 10600 QUIVIRA RD STE 320, 66215-0000

541-3200 1902890676  
63 M 1902 92 OBG

HENRY MD, JOSEPH E, 8901 W 74TH STE 348, 66204-2203

432-8000 1902680361  
0 M 1902 0 PUD

HESS MD, STEVEN J, 9119 W 74TH ST STE 260, 66204-2229

432-1100 1902860831  
60 M 1902 92 NS

HESSER MD, HERBERT H, 6555 W 75TH ST A #334, 66204-0000

0 1902340242  
6 M 1902 34 OO

HETTINGER MD, MICHAEL E, 7504 ANTIOCH RD, 66204-2622

341-3100 4706750431  
46 M 4706 81 OPH

HILL MD, RODNEY W, 8901 W 74TH ST #208, 66204-2202

362-0300 1902741573  
47 M 1902 75 IM

HITCHCOCK MD, C THOMAS, 8901 W 74TH ST #356, 66204-2203

677-2508 1902730521  
47 M 0 82 GS

HOBSON MD, MILBURN W, 5467 W 85TH TER, 66207-1722

0 1902550522  
30 M 1902 55 OO

HODES MD, HERBERT C, 4840 COLLEGE STE 100, 66211-1601

491-6878 1902690553  
43 M 1902 70 OBG

HOOD MD, ROGER W, 8300 COLLEGE STE 105, 66210-2603

451-9310 1643740431  
48 M 1643 76 ORS

HOOPES MD, PHILLIP C, 5520 COLLEGE, 66211-0000

491-3737 3605760944  
48 M 3605 0 OPH

HOPKINS MD, LENLY, 7312 ANTIOCH RD, 66204-2739

722-6121 3841560344  
30 M 3841 65 GS

HOPKINS MD, WILLIAM O, 8575 W 110TH STE 306, 66210-2620

451-1919 2803610358  
33 M 2803 72 ORS

HOUSTON II MD, LAWRENCE MORLEY, 5520 COLLEGE BLVD #460, 66211-1600

451-1311 2803760449  
50 M 2803 79 FP

HSU MD, CECILIA C, 7315 E FRONTAGE RD STE 114, 66204-1658

888-9129 24402730478  
43 F 24402 84 PD

HUMPHREY MD, MARK S, 10600 QUIVIRA RD STE 230, 66215-2311

541-8897 1902840890  
58 M 1902 85 ORS

HUSEMAN MD, RICHARD ALLAN, 8901 W 74TH ST #357, 66204-2203

831-2430 1720720961  
46 M 1720 75 NEP

INNES MD, ROBERT C, 10226 BRIAR, 66207-3418

0 2802490294  
25 M 2802 66 OO

JACKSON MD, ROBERT V, 8901 W 74TH ST #10, 66204-2291

362-1660 2803770401  
49 M 2803 80 PD

JANES MD, DONALD R, 10550 QUIVIRA #310, 66215-2308

492-1955 1902600350  
34 M 1902 62 OBG

JOHNSON MD, J CHRIS, 8901 W 74TH ST STE 145, 66204-2201

722-0020 2846850832  
56 M 2846 90 OTO

JOHNSON MD, PAMELA M, 8901 W 74TH ST #10, 66204-2291

362-1660 1902841233  
58 F 1902 87 PD

JONES MD, CHARLES E, PO BOX 2923, 66201-1323

676-2214 1902600368  
31 M 1902 61 FP

JONES MD, H IVOR, 8901 W 74TH ST #269, 66204-2202

362-4040 80303510072  
24 M 80303 59 P

KARLIN MD, CHARLES A, PO BOX 29194, 66210-1374

469-8998 1902752265  
49 M 1902 76 DR

KASHYAP MD, BANSHI PRASAD, 8901 W 74TH ST #257, 66204-2202

236-4500 49554710017  
47 M 49554 78 IM

KATZ MD, ARNOLD L, 10550 QUIVIRA RD #470, 66215-2304

888-3231 5101700293  
44 M 5101 0 RHU

KATZ MD, FRED S, 8901 W 74TH ST #145, 66204-2294

722-0020 1902791066  
50 M 1902 58 OTO

KEITGES MD, PIERRE W, 7800 W 110TH, 66210-2306

338-4070 3006570371  
33 M 3006 72 PATH

KELLEY MD, GORDON R, 8800 W 75TH STE 100, 66204-4001

384-4200 6002770014  
52 M 6002 83 N

KENNEDY MD, KENNTH R, 7004 CAENEN AVE, 66216-2691

432-0126 1902530467  
24 M 1902 0 GP

KENNY MD, LAURA M, 9119 W 74TH ST #200, 66204-2229

677-1500 1902831009  
56 F 1902 87 OBG

KETCHUM MD, LYNN D, 12301 W 106TH STE 201, 66215-2292

492-3737 2101600524  
36 M 2101 69 PS

KIRBY MD, HOLLY F, 4601 W 109TH #106, 66211-0000

451-3030 0  
51 F 801 82 D

KOCH MD, KEVIN J, 9100 W 74TH, 66204-4019

676-2214 2846800339  
55 M 2846 89 EM

KODANAZ MD, A AYTEKIN, 5710 REINHARDT DR, 66205-3322

596-4100 90201550695  
28 M 90201 70 AN

KOZIKOWSKI MD, BEN M, 9119 W 74TH ST #350, 66204-2203

362-8317 2834550477  
30 M 2834 62 ORS

KUBIN MD, DORIS A, 2504 W 71ST, 66208-0000

0 1902430446  
15 F 1902 43 OO

KUEBLER MD, KEVIN M, 9359 W 75TH ST, 66204-4000

341-0120 2101750658  
50 M 2101 82 CDTs

KURTH MD, ROBERT H, 4508 W 74TH TER, 66208-2963

0 3005530376  
28 M 3005 59 OO

LAMBERT MD, MICHAEL B, 8901 W 74TH ST STE 357, 66204-2203

831-2430 3901850827  
58 M 3901 0 NEP

LAPI MD, ANGELO, 2012 STRATFORD RD, 66208-1257

362-4127 3506370239  
13 M 3506 0 PATH

LAPI MD, RUTH M, 2012 STRATFORD RD, 66208-1257

0 4107370141  
14 F 4107 50 OO

LARSON MD, DANUTA OKTAWIEC, 5848 FONTANA DR, 66205-3150

0 0  
22 F 80303 61 OO

LASH MD, RAY E, 8901 W 74TH ST #21, 66204-2245

722-0080 1902752338  
50 M 1902 76 CD

LEE MD, JAMES G, 5700 METCALF CT, 66202-2350

0 1902440867  
18 M 1902 44 OO

LEGASPI JR MD, PEDRO L, 10540 BARKLEY STE 70, 66212-1842

676-2479 74801600127  
36 M 74801 71 AN

LEMOINE JR MD, ALBERT N, 7645 CANTERBURY ST, 66208-3942

0 2802430992  
18 M 2802 47 OO

LEO MD, WILLIAM A, 4505 W 66TH, 66208-0000

0 1902520445  
22 M 1902 52 OO

LESTER MD, JOHN BUCKLES, 4140 W 71ST STE 108, 66208-2805

432-7276 1902700681  
45 M 1902 71 P

LEVINE MD, HOWARD T, 5520 COLLEGE BLVD STE 110, 66211-1600

491-3300 2101850776  
59 M 2101 89 A

LEWIN MD, WALTER, 8901 W 74TH ST #269, 66204-2202

362-4040 1902560668  
30 M 1902 56 P

LOCKWOOD MD, TED E, 10600 QUIVIRA RD #470, 66215-2312

894-1070 1902710651  
45 M 1902 91 PS

LOTUACO MD, GAMALIEL G, 5520 COLLEGE BLVD #232, 66211-1600

491-6373 74801641184  
41 M 0 0 PS

LUND MD, STEPHEN B, PO BOX 2923, 66201-1323

676-2214 2604731529  
47 M 2604 89 EM

MALLORY MD, JOHN A, 10600 QUIVIRA STE 210, 66215-2311

541-3340 2803710476  
43 M 2803 75 IM

MANCINA MD, MICHAEL S J, 10550 QUIVIRA STE 360, 66215-0000

599-2222 2604772675  
46 M 2604 89 CD

MANTZ MD, FRANK A, 9309 W 103RD, 66212-5503

0 4101380691  
12 M 4101 61 OO

MARTIN MD, MELANIE A, 8901 W 74TH ST #36, 66204-2253

236-6455 1902851166  
58 F 1902 89 OBG

MASTERS MD, FRANCIS W, 6738 RAINBOW, 66208-2264

0 3545450321  
20 M 3545 58 OO

MATHEWS MD, ROBERT M, 10308 METCALF/MAIL SERV INC, 66212-0000

0 1902540608  
25 M 1902 54 OO

MAXWELL MD, ROBERT A, 8901 W 74TH ST #10, 66204-2291

362-1660 1902730741  
46 M 1902 75 PD

MCCOWEN MD, HERBERT M, 10100 W 119TH STE 275, 66213-0000

491-1616 1902851221  
58 M 1902 0 FP

MCCUNE MD, MARK A, 10600 QUIVIRA RD STE 430, 66215-2312

541-3230 1902770883  
52 M 1902 81 D

MCEACHEN MD, WILLIAM H, 3700 W 83RD STE 102, 66208-5120

649-3335 1902590575  
32 M 1902 60 PD

MCGRATH MD, BARBARA A, 7509 NALL AVE, 66208-4751

381-5544 4109750889  
49 F 4109 86 PS

MCGUIRE MD, THOMAS H, 10600 QUIVIRA RD STE 320, 66215-2311

541-3200 1902560731  
32 M 1902 0 OBG

MCINTEE MD, RAE A, 5520 COLLEGE BLVD STE 110, 66211-1600

345-1215 0  
57 F 3006 91 OTO

MCMURRAY MD, LAURA J, 10550 QUIVIRA #410, 66215-2304

541-0990 1902831220  
57 F 1902 0 OBG

MIGLIAZZO MD, CARL V, 7504 ANTIOCH RD, 66204-2622

341-3100 2803790763  
49 M 2803 85 OPH

MILLER MD, F LANCE, 12301 W 106TH ST #200, 66215-2292

492-1111 1902742316  
48 M 1902 77 PD

MILLS MD, BRIAN G, 9100 W 74TH ST, 66204-4019

676-2679 0  
61 M 1902 92 AN

MINGLE MD, RALPH R, 9119 W 74TH ST #150, 66204-2201

362-5510 1902801274  
54 M 1902 81 FP

MISKEW MD, DON B W, 9119 W 74TH STE 350, 66204-3005

362-8317 6506690020  
42 M 6506 80 ORS

MOFFAT MD, ROBERT E, PO BOX 29194, 66201-9194

469-0094 1902680680  
42 M 1902 69 DR

MORITZ MD, RICK S, 12316 NIEMAN RD, 66213-2124

371-4343 1902781320  
54 M 1902 81 DR

MUEHLBERGER MD, JAMES J, 4601 W 109TH STE 314, 66211-1315

491-3242 3006600360  
34 M 3006 70 PD

MURPHY MD, JAY W, 8901 W 74TH ST #21, 66204-2291

722-0080 3840733016  
49 M 3840 74 CD

NAUER MD, PAULA LOU, 8340 MISSION RD #101, 66206-1362

384-0745 1902742324  
49 F 1902 78 FP

NAVICKAS MD, LEONARD A, 9119 W 74TH ST #150, 66204-2201

362-5510 1902771057  
53 M 1902 78 FP

NAZARIO MD, LILIANA E, 10100 W 119TH STE 275, 66213-0000

491-1616 1902851301  
57 F 1902 87 FP

NEIBURGER MD, JAMES B, 5520 COLLEGE BLVD #110, 66211-1600

491-3300 1642720518  
46 M 1642 75 A

NEIGHBOR MD, ERNEST H, 8612 REINHARDT LANE, 66206-1455

831-3433 1902660751  
40 M 1902 67 ORS

NELSON MD, BRYAN C, 8800 W 75TH ST #220, 66204-4001

384-5500 1902752508  
50 M 1902 78 PD

NORTON MD, KENNETH A, 8901 W 74TH ST #333, 66204-2248

262-9311 1902752532  
50 M 1902 86 IM



NOSTI MD, JUAN C, 8901 W 74TH ST #345, 66204-2289

262-5014 13204630083  
38 M 13204 72 PS

NOTHNAGEL MD, ARNOLD F, 9936 EDELWEISS CIR, 66203-4613

0 1902390398  
15 M 1902 39 OO

NYE MD, C ERIK, 9119 W 74TH ST #350, 66204-2203

362-8317 3520650571  
39 M 3520 78 ORS

O'CONNELL MD, SARA S, 7504 ANTIOCH, 66204-2622

341-3150 1902842086  
57 F 1902 92 OPH

OLSON MD, THOMAS H, 8901 W 74TH ST #10, 66204-2291

362-1660 3005791030  
54 M 3005 84 PD

OWENS MD, DAVID B, 10600 QUIVIRA RD #440, 66215-2312

492-1844 3006760634  
50 M 3006 83 OBG

OXLER JR MD, JOHN EDWARD, 8800 W 75TH STE 300, 66204-4001

722-4240 1902720894  
46 M 1902 74 IM

PAREKH MD, MADHAVI A, 7315 FRONTAGE RD #114, 66204-1658

888-9129 49501710341  
47 F 49501 85 FP

PARR MD, CATHERINE, 10550 QUIVIRA STE 410, 66215-0000

541-0990 1902771146  
52 F 1902 80 OBG

PATTERSON MD, JOHN R, 5317 CHADWICK RD, 66205-2622

0 1902480362  
20 M 1902 48 OO

PAZELL MD, JOHN A, 12210 W 87TH PKY #120, 66215-0000

541-0509 2501661247  
40 M 2501 73 ORS

PEARCE MD, LUNETTA M, 9119 W 74TH ST #208, 66204-2202

362-1525 3005490455  
26 F 3005 52 FP

PENTECOST MD, RICHARD L, 6620 RIGGS, 66202-4121

0 1001560626  
32 M 1001 65 OO

PERRY MD, MARK A, PO BOX 29194, 66201-0000

469-0094 0  
60 M 2802 91 R

PETELIN MD, JOSEPH B, 9119 W 74TH ST #255, 66204-2202

432-5420 1902761043  
49 M 1902 81 GPVS

PETERS MD, ERIC A, 5520 COLLEGE BLVD STE 350, 66211-0000

661-9980 1902881227  
62 M 1902 93 IM

PETERSEN MD, GERALD D, 4121 W 83RD ST #254, 66208-5303

648-3911 1902600635  
30 M 1902 66 IM

PFUETZE MD, BRUCE L, 11725 W 112TH, 66210-0000

469-5579 1902680795  
42 M 1902 69 A

PFUETZE MD, KARL D, 10550 QUIVIRA STE 510, 66215-2305

492-6200 1902660832  
40 M 1902 67 CD

PHILLIPS MD, WARREN G, 8201 MISSION #261, 66208-5212

649-0923 1902600643  
26 M 1902 63 P

PILCHARD MD, WILLIAM A, 8901 W 74TH ST #25, 66204-2287

362-3210 1602650436  
39 M 1602 72 OPH

PINGLETON MD, WILLIAM W, 8901 W 74TH STE 348, 66204-2203

432-8000 3901670675  
42 M 3901 0 PUD

PIPPIN MD, LYNNE K, 17409 W 66TH TER, 66217-9734

281-8400 35207720036  
48 F 35207 72 AN

PITTS MD, RONALD L, 8901 W 74TH ST #330, 66204-2286

362-2524 2002620831  
35 M 2002 72 D

PORTO JR MD, ANTHONY F, 10550 QUIVIRA STE 120, 66215-2302

894-9125 3006750604  
50 M 3006 85 ENT

POWELL MD, CAROL W, 8216 CHEROKEE CIR, 66206-1130

381-3785 1902510652  
25 F 1902 51 P

POWELL MD, KENNETH A, 8216 CHEROKEE CIR, 66206-1130

381-3785 1902530688  
25 M 1902 53 IM

PRENDES MD, CARLOS A, 6540 W 95TH, 66212-1435

381-5550 3005791099  
50 M 3005 81 FP

PRONKO MD, MICHAEL J, 4121 W 83RD STE 223, 66208-5317

648-7878 1902600680  
34 M 1902 61 P

PROUD MD, G ONEIL, 3721 W 87TH, 66206-1643

0 2802390664  
13 M 2802 50 OO

QUIGLEY MD, JAMES, PO BOX 2923, 66201-1323

676-2340 2803771165  
50 M 2803 84 PATH

QUINN MD, JOHN M, 10550 QUIVIRA RD STE 450, 66215-2304

492-3443 2846810512  
57 M 2846 87 PS

RASMUSSEN MD, THOMAS J, 3801 W 61ST TER, 66205-3455

362-0031 1902861374  
59 M 1902 0 ORS

REED JR MD, WILLIAM O, 8901 W 74TH ST #225, 66204-2258

831-2604 2803771131  
50 M 2803 83 ORS

REIFSCHNEIDER D O, JOHN S, 5520 COLLEGE BLVD, 66211-1600

491-3737 2878810689  
54 M 2878 92 OPH

REVELS MD, HARRY, 5520 COLLEGE BLVD #201, 66211-1600

491-3737 2834560855  
31 M 2834 92 OPH

REYNOLDS MD, MICHAEL G, 8701 W 74TH ST STE 25, 66204-0000

362-3210 0  
61 M 1902 92 OPH

RICE MD, BERNARD F, 8901 W 74TH ST #125, 66204-2285

262-9222 4113560989  
31 M 4113 79 END

RICHARDSON II D O, LESTER E, PO BOX 2923, 66201-1323

676-2214 3875830201  
53 M 3875 90 EM

RICHARDSON MD, JAY L, 10550 QUIVIRA RD #510, 66215-2300

492-6200 1902650748  
38 M 1902 66 GS

RICHTER MD, DON G, 10540 BARKLEY STE 70, 66212-1842

268-0500 1902761116  
50 M 1902 79 AN

RICK JR MD, GREGORY G, 8901 W 74TH ST #372, 66204-2200

831-9300 1902660867  
40 M 1902 67 GE

RIDGWAY MD, LEAH D, 9119 W 74TH ST, 66204-0000

677-3113 0  
62 F 4804 92 OBG

RIEKHOF MD, PAUL L, 10600 QUIVIRA STE 320, 66215-2311

541-3200 2803650627  
40 M 2803 0 OBG

RIFFEL MD, LAWRENCE D, 10600 QUIVIRA STE 210, 66215-2311

541-3340 1902781567  
53 M 1902 81 IM

ROBERTSON MD, EDWARD J, 10540 BARKLEY #70, 66212-1842

676-2479 1902761124  
46 M 1902 78 AN

ROBINSON MD, DAVID W, 7930 BRISTOL CT, 66208-5220  
0 4101380985  
14 M 4101 40 OO

ROBINSON MD, JOHN D, 10540 BARKLEY #70, 66212-1842  
268-0500 1902741743  
48 M 1902 75 AN

ROPE MD, DOUGLAS M, 11100 ASH STE 200, 66211-1764  
491-3611 1902751111  
50 M 1902 92 IM

ROSENBERG MD, STANTON L, 1900 W 75TH STE 200, 66208-3501  
362-8080 1902550972  
30 M 1902 55 P

ROSENTHAL MD, RICHARD H, 10500 QUIVIRA RD, 66215-2373  
541-5000 2846760281  
50 M 2846 0 IM

RUBIN MD, HERBERT M, 12301 W 106TH ST STE 200, 66215-2292  
492-1111 2803630511  
37 M 2803 72 PD

RYAN MD, MICHAEL E, 8800 W 75 #100, 66204-4001  
384-4200 1902720975  
46 M 1902 73 N

RYMER MD, ROBERT A, 8901 W 74TH ST #373, 66204-4096  
722-0170 702680581  
41 M 702 80 OPH

SATHYANARAYANA MD, SARASWATHI, 8901 W 74TH ST #20, 66204-2240  
677-2281 49509670144  
45 F 0 76 OBG

SAWKAR MD, LAXMIDAS A, 8901 W 74TH ST #312, 66204-2280  
384-4844 49523660046  
36 M 49523 74 ON

SAXER MD, JOHN J, 12902 STATE LINE, 66209-1649  
451-4443 1643850997  
59 M 1643 87 FP

SCHLICHTER MD, KIMBERLY A, 9119 W 74TH STE 268, 66204-2229  
831-2334 2834821331  
56 F 1902 87 OBG

SCHREPFER MD, ROSEMARY, 6401 ENSLEY LN, 66208-1933  
0 1902470553  
22 F 1902 47 OO

SCHROLL MD, JOHN T, 8901 W 74TH ST #248, 66204-2281  
384-4990 1902761213  
51 M 1902 77 OBG

SCHUTZ MD, RALPH A, 10500 QUIVIRA RD (EM), 66215-0000  
541-5000 1902821704  
51 M 1902 0 EM

SCHWARTZ MD, ANDREW M, 9359 W 75TH ST, 66204-4000  
341-0120 1002811711  
54 M 1002 90 TS

SCLAR MD, WILLIAM C, 10600 QUIVIRA STE 400, 66215-2312  
541-3240 2501721720  
46 M 2501 79 GS

SHAAD MD, DOROTHY J, 2322 W 51ST, 66205-2010  
0 1902441341  
9 F 1902 44 OO

SHAFFER MD, KATHLEEN BRAY, 8800 W 75TH ST #250, 66204-4001  
384-5500 2846790031  
54 F 2846 82 PD

SHERIDAN MD, RANDY M, 8901 W 74TH ST #36, 66204-2253  
236-6455 1902781681  
53 M 1902 81 OBG

SHIMSHAK MD, KAREN S, 8901 W 74TH ST STE 328, 66204-0000  
722-6668 0  
59 F 5606 0 PDO

SIFERS MD, TIMOTHY M, 8901 W 74TH ST #356, 66204-2203  
677-2508 1902741760  
48 M 1902 75 GS

SILVER MD, BRADD J, 8800 W 75TH STE 101, 66204-4001  
362-2035 1205760811  
50 M 1205 77 IM

SIMON MD, STEVEN M, 5701 W 110TH, 66211-2504  
491-2440 30501830310  
47 M 30501 84 PM

SIMONE MD, JOSEPH N, 8901 W 74TH ST #25, 66204-2287  
362-3210 1902831670  
49 M 1902 87 OPH

SINCLAIR MD, RICHARD H, 10600 QUIVIRA RD STE 320, 66215-2311  
541-3200 0  
37 M 2834 75 OBG

SMITH MD, DALE C, 10232 FOSTER ST, 66212-0000  
0 1902450668  
20 M 1902 45 OO

SMITH MD, DONALD J, 6841 WOODSON, 66204-1544  
384-9040 1902490635  
18 M 1902 49 FP

SMITH MD, WILLIAM P, PO BOX 29194, 66210-1374  
469-8998 1902771405  
51 M 1902 79 R

SNODELL MD, FIRMIN E, 5555 W 58TH ST, 66202-1999  
432-2080 1902610754  
31 M 1902 62 IM

SNOW JR MD, ARTHUR D, 9119 W 74TH ST #150, 66204-2201  
362-5510 1902752800  
45 M 1902 76 FP

SPITTLER MD, LEO J, 10550 QUIVIRA, 66215-1000  
541-5384 0  
50 M 3005 83 DR

STASS-ISERN MD, MERRILL, 10550 QUIVIRA RD #335, 66215-2308  
888-1888 84706770011  
50 F 84706 78 PDO

STEINZEIG MD, SHERMAN M, 4407 W 71ST, 66208-3500  
0 1902520640  
25 M 1902 52 OO

STITES MD, SANDRA R, 10600 QUIVIRA STE 320, 66215-2311  
541-3200 2803860940  
60 F 2803 90 OBG

STRICKLAND MD, JOHN T, 8901 W 74TH ST #32, 66204-2254  
831-1003 2803840965  
58 M 2803 89 U

STRIEBINGER MD, CHARLES M, 9119 W 74TH ST #303, 66204-2203  
432-1100 1606711197  
45 M 1606 77 NS

STUCKEY MD, CHARLES E, 10600 QUIVIRA STE 350, 66215-2312  
541-3377 3005680815  
41 M 3005 80 GS

SUGAR MD, ROBERT L, 8901 W 74TH ST #248, 66204-2281  
384-4990 3508661401  
40 M 3508 72 OBG

SULLIVAN JR MD, HENRY B, 5817 NIEMAN RD #320, 66203-2894  
631-6160 1902520666  
24 M 1902 52 FP

SULLIVAN MD, TOM G, 10600 QUIVIRA STE 320, 66215-2311  
541-3200 1902711101  
44 M 1902 75 OBG

TAYLOR MD, THOMAS F, 13347 W 105TH ST, 66215-0000  
0 1902530858  
26 M 1902 53 OO

TAYLOR MD, THOMAS L, 8901 W 74TH ST #34, 66204-2278  
362-9444 1902661031  
40 M 1902 67 GS

TENNY MD, ROBERT T, 8901 W 74TH ST #200, 66204-2202  
831-0000 1902761361  
51 M 1902 81 NS

THOMAS MD, MARTY H, 10600 QUIVIRA STE 320, 66215-2311  
541-3200 1902790931  
51 F 1902 84 OBG

THOMPSON MD, MICHAEL F, 10550 QUIVIRA STE 260, 66215-2303  
541-0577 3005791323  
53 M 3005 89 GE



THOMPSON MD, ROBERT F, 4601 W 109TH ST STE 320, 66211-1315  
 339-6665 2803850995  
 58 M 2803 90 OTO

THOMSEN MD, GARY, 9119 W 74TH ST #150, 66204-2201  
 362-5510 3005762722  
 51 M 3005 77 FP

TOALSON MD, WILLIAM B, 8901 W 74TH ST #21, 66204-2245  
 722-0080 1902630836  
 37 M 1902 64 CD

TOMASKO MD, MARILYN A, 5300 W 94TH TER, 66207-2504  
 381-4674 1611813453  
 55 F 1611 90 A

TOWLE MD, DANA R, 12301 W 106TH ST STE 221, 66215-2292  
 492-3737 0  
 59 M 2834 90 PS

TRETBAR MD, LAWRENCE L, 8901 W 74TH ST #300, 66204-2277  
 677-1776 1902600881  
 33 M 1902 67 GS

TUCKER MD, SHERIDAN G, 7299 W 98TH TER STE 150, 66212-6183  
 341-5800 1902752940  
 50 M 1902 77 CHP

TYSON MD, MARY M, 8800 W 75TH #220, 66204-0000  
 384-5500 3901880912  
 58 F 3901 92 PD

VALK MD, WILLIAM L, 5401 W 81ST, 66208-4926  
 0 2501370790  
 9 M 2501 46 OO

VANNAMAN MD, DONALD D, 10600 QUIVIRA STE 330, 66215-2312  
 541-3300 1902711135  
 43 M 1902 72 PD

VODONICK MD, DAVID S, PO BOX 2923, 66201-1323  
 676-2214 1902801584  
 50 M 1902 90 EM

WALD MD, JEFFREY A, 4500 COLLEGE BLVD STE 200, 66211-5760  
 491-5501 2803800980  
 54 M 2803 89 A

WALKER MD, JACK D, 7903 W 118TH TER, 66210-2570  
 0 1902530912  
 22 M 1902 53 OO

WANG MD, SIDNEY W, 7315 FRONTAGE RD #150, 66204-1658  
 722-2020 38503570049  
 32 M 38503 70 FP

WAXMAN MD, DAVID, 12516 W 85TH TER, 66215-2858  
 588-1227 3515500358  
 18 M 3515 70 IM

WEBB MD, JAMES R, 5949 NIEMAN RD, 66203-2907  
 631-0900 1902610851  
 34 M 1902 62 FP

WEBSTER MD, BOBBY W, 10600 QUIVIRA RD STE 110, 66215-2310  
 894-2323 4802742288  
 48 M 4802 75 OBG

WHITAKER MD, MARK A, 12301 W 106TH ST #200, 66215-2292  
 492-1111 1902771596  
 53 M 1902 0 PD

WHITEHEAD MD, RICHARD E, 9119 W 74TH ST #350, 66204-2203  
 362-8317 2501581618  
 31 M 2501 65 ORS

WHITFIELD MD, STEVEN S, 8901 W 74TH ST #21, 66204-2245  
 722-0080 1902821968  
 56 M 1902 0 CD

WHITLEY MD, DOUGLAS M, 4601 W 109TH STE 202, 66211-1314  
 491-3736 1902600953  
 34 M 1902 61 D

WIEGHARD MD, MICHAEL, PO BOX 2923, 66201-1323  
 676-2214 1720792881  
 54 M 1720 90 EM

WIGGINTON D O, GERALD D, 8800 W 75TH ST #220, 66204-4001  
 384-5500 2878700051  
 44 M 2878 73 PD

WILEY MD, JOHN H, 9119 W 74TH ST #268, 66204-2202  
 831-2334 4113631151  
 37 M 4113 70 OBG

WILLIAMS MD, THOMAS A, 10550 QUIVIRA STE 220, 66215-2303  
 894-4111 1902620920  
 36 M 1902 63 FP

WILSON MD, ROBERT B, 6117 W 119TH APT 3318, 66209-3703  
 0 1902400601  
 10 M 1902 40 OO

WILSON MD, SLOAN J, 5618 W 62ND, 66202-3531  
 0 1902360618  
 10 M 1902 36 OO

WOHLER MD, JOHN P, 11929 W 66TH ST, 66216-0000  
 0 0  
 46 M 3901 85 FP

WOOD MD, FRED M, 8901 W 74TH ST #225, 66204-2258  
 831-2604 4706620589  
 38 M 4706 80 ORS

WURSTER MD, G. RICHARD, 8201 MISSION #261, 66208-5212  
 649-0923 1902610908  
 35 M 1902 62 P

YEOMANS MD, RONALD N, 4401 W 109TH, 66211-1303  
 345-1400 1902670986  
 40 M 1902 68 OBG

YOHE MD, RUTH M, 8600 W 95TH, 66212-3201  
 383-3377 4107540437  
 26 F 4107 59 PDA

YOUNG MD, JOHN W, 9119 W 74TH ST #306, 66204-2203  
 383-1550 4706630401  
 37 M 4706 72 PS

YOUNGLOVE MD, HAL, 10550 QUIVIRA STE 410, 66215-2304  
 541-0990 3005752379  
 50 M 3005 89 OBG

YUT JR MD, JOSEPH P, PO BOX 29194, 66201-9194  
 469-0094 1602831058  
 57 M 1602 85 DR

ZAMIEROWSKI MD, DAVID S, 8800 W 75TH STE 340, 66204-4001  
 831-4113 2307680958  
 42 M 2307 78 PS

## SMITH CENTER — 913 (Central Kansas Medical Society)

BARNES MD, JOE L, PO BOX 285, 66967-0285  
 282-6834 1902820082  
 54 M 1902 89 FP

CONANT MD, FERRILL R, 119 E PARLIAMENT, 66967-0000  
 282-6834 1902860343  
 56 M 1902 0 GP

SHEPPARD MD, ROBERT G, 400 W COURT, 66967-2504  
 0 1902450625  
 21 M 1902 45 OO

UBELAKER MD, ERNEST J, PO BOX 197, 67140-0197  
 892-2261 1902380597  
 11 M 1902 38 FP

## SOUTH HAVEN — 316 (Cowley County Medical Society)

UBELAKER MD, ERNEST J, PO BOX 197, 67140-0197  
 892-2261 1902380597  
 11 M 1902 38 FP

**SOUTH HUTCHINSON — 316**  
*(Reno County Medical Society)*

HANSON MD, DAVID C, 10 S MAIN ST, 67505-1508  
669-6600 512731139  
46 M 512 74 FP

**ST FRANCIS — 913**  
*(Northwest Kansas Medical Society)*

CRAM MD, ERNEST R, PO BOX 625, 67756-0625  
0 1902520178  
24 M 1902 52 OO

STEPHENSON MD, LUCILLE C, BOX 824, 67756-0824  
0 1902320438  
6 F 1902 32 OO

**ST MARYS — 913**  
*(Pottawatomie County Medical Society)*

SEELEY MD, JAMES C, 503 E HIGHWAY 24, 66536-0000  
437-2256 1902640785  
34 M 1902 65 GP

**STAFFORD — 316**  
*(Linnescah Medical Society)*

BROWN MD, C EVERETT, PO BOX E, 67578-0356  
0 1902470103  
10 M 1902 47 OO

FARMER III D.O., F J, PO BOX 309, 67578-0309  
234-6826 2878790688  
52 M 2878 80 FP

**STERLING — 316**  
*(Rice County Medical Society)*

DYSART MD, JACK C, 224 N 4TH, 67579-1930  
0 1601390201  
12 M 3901 41 OO

SIMPSON MD, TOM C, 239 N BROADWAY, 67579-1916  
278-2123 1902731071  
47 M 1902 74 FP

**STILLWELL — 913**  
*(Johnson County Medical Society)*

ARMBRUSTER MD, ALBERT A, 3540 W 199, 66085-9258  
0 512550045  
17 M 512 58 OO

**STOCKTON — 913**  
*(Central Kansas Medical Society)*

MAUCK MD, HAROLD C, 14 HILLCREST DR, 67669-1203  
0 1902540616  
20 M 1902 54 OO

VOTAPKA MD, WILLIAM L, PO BOX 538, 67669-0538  
425-6280 1902530904  
24 M 1902 53 OO

**SYRACUSE — 316**  
*(Southwest Kansas Medical Society)*

ALTER MD, BRUCE R, PO BOX 749, 67878-0749  
384-7350 64927820020  
43 M 3607 0 FP

PETTERSON MD, CECIL E, PO BOX 1045, 67878-1045  
384-5731 1902390436  
14 M 1902 39 FP

**TONGANOXIE — 913**  
*(Douglas County Medical Society)*

STEVENS MD, PHILIP L, BOX 319, 66086-0319  
845-2090 1902540918  
27 M 1902 54 FP

**TOPEKA — 913**  
*(Shawnee County Medical Society)*

ALLEN MD, JAMES E, 2947 SW WANAMAKER DR, 66614-5322  
273-2552 1902720037  
46 M 1902 73 IM

ALLEN MD, TIMOTHY E, 823 MULVANE, 66606-1679  
234-3451 1902761817  
49 M 1902 79 R

AMARANENI MD, PRASUNAMBA G, PO BOX 829, 66606-9603  
273-7500 0  
54 F 49550 91 N

ARJUNAN MD, K N, 634 SW MULVANE ST #202, 66606-1678  
232-3555 49514700051  
44 M 49568 83 NS

ARTZER MD, DENNIS C, 901 GARFIELD, 66606-1670  
354-9591 1902760055  
51 M 1902 0 NEP

ARUNAKUL MD, PUNYA, 1710 SW 10TH AVE, 66604-1340  
234-2624 89102690622  
44 M 89104 80 OTO

ASHLEY JR MD, B JOHN, 1616 W 8TH, 66608-1990  
233-2280 1902560048  
31 M 1902 56 OPH

ASHLEY MD, BYRON J, 3222 PLASS, 66611-2058  
0 1902240019  
98 M 1902 24 OO

ASHLEY MD, THOMAS J, 1616 SW 8TH ST, 66606-1634  
233-2280 1902840083  
58 M 1902 88 OPH

ATWOOD D O, ERIC B, BOX 829, 66601-0829  
273-7500 2878860562  
58 M 2878 87 P

ATWOOD MD, MICHAEL D., 901 GARFIELD, 66606-1670  
354-0570 1902820040  
56 M 1902 84 FP

AVERILL MD, STUART C, PO BOX 829, 66601-0829  
273-7500 502520041  
24 M 502 58 P

BAIR MD, GLENN O, 1125 SW GAGE #C, 66604-1774  
267-3025 2401570066  
31 M 2401 59 IM

BAKER MD, PHILLIP L, 909 MULVANE, 66606-1682  
357-0301 3005630061  
37 M 3005 63 ORS

BAKER MD, RAY D, 4430 MARLBORO RD, 66610-0000  
0 4812550051  
30 M 4812 67 OO

BARABAN MD, MARC R, 823 MULVANE STE 200, 66606-1679  
357-5325 2846750030  
50 M 2846 80 PS

BARNETT MD, ROBERT E, 823 SW MULVANE ST STE 280, 66606-1679  
235-0202 2802820031  
57 M 2802 84 OBG

BASSETT MD, PAUL M, 1500 SW 10TH AVE, 66604-1301  
354-6100 1902770077  
52 M 1902 80 EM



BAUM MD, CURTIS A, 823 SW MULVANE ST 4TH FL, 66606-1679 345-9591 1902830193 57 M 1902 84 IM	CARNEY MD, LISA A, 4100 SW 15TH ST, 66604-4333 273-8224 1902890200 62 F 1902 0 PD
BEALE MD, DAVID A, PO BOX 829, 66601-0829 273-7500 5404560028 31 M 5404 64 P	CASHMAN JR MD, MAURICE R, 823 MULVANE STE 400, 66606-1679 354-9591 1902610151 35 M 1902 66 HEM
BECK MD, JOSEPH D, 2760 SW BURLINGAME RD, 66611-1314 0 3005430118 18 M 3005 47 OO	CHALLA MD, SHEKHAR K, 2200 SW 6TH #104, 66606-1707 354-8518 49557790062 56 M 49521 87 GE
BEDFORD MD, D R, PO BOX 1772, 66601-1772 0 4802400140 9 M 4802 46 OO	CHEN MD, CHU-CHI, 1710 SW 10TH AVE #200, 66604-1331 354-4465 24405730037 47 M 24405 81 U
BEELMAN MD, FLOYD C, 3220 SW ALBRIGHT DR #HC, 66614-4757 0 3840350079 2 M 3840 36 OO	CHEN MD, TAK-MING, 823 SW MULVANE #230, 66606-1679 235-3451 24405680161 41 M 24402 76 AN
BELLOWS-BLAKELY MD, DAVID S, PO BOX 829, 66601-0829 273-7500 1902770123 51 M 1902 0 P	CHERRY JR MD, ARTHUR C, 3500 SW 6TH ST, 66606-1905 235-0335 3806530114 27 M 3806 58 PD
BLEIBERG MD, EFFRAIN, PO BOX 829, 66601-0829 273-7500 64902760057 51 M 64930 78 P	CLARK MD, CRAIG N, 300 SE NORWOOD, 66607-2216 0 1902580197 29 M 1902 58 OO
BONEBRAKE MD, C RICHARD, 634 SW MULVANE ST STE 104, 66606-1678 295-5330 1606750184 48 M 1606 79 OBG	COHEN MD, LOUIS, 823 MULVANE STE 385, 66606-1679 233-7175 1902410101 14 M 1902 41 IM
BOREL MD, DAVID, 1700 SW 7TH ST, 66606-1690 295-8473 1902710104 45 M 1902 72 PATH	COKER MD, W LAURENCE, 901 SW GARFIELD AVE, 66606-1670 354-0570 1902780366 53 M 1902 81 FP
BORGE MD, CARLOS A, 823 SW MULVANE ST STE 275, 66606-1679 273-7138 64903770064 54 M 64914 88 P	COLLINS MD, DEAN T, PO BOX 829, 66601-0829 273-7500 1902550239 28 M 1902 55 OO
BOWEN JR MD, HARRY J, 1900 SW PEMBROOK LN, 66604-3263 0 1902370087 11 M 1902 37 OO	COLLINS MD, EDWARD J, 900 WASHBURN, 66606-1653 233-3242 1611710344 45 M 1611 77 OPH
BOWEN MD, CLOVIS W, 900 SW 31ST ST #230, 66611-2196 0 1902370079 12 M 1902 37 OO	CONOVER MD, MARGARET A, 1700 W 7TH, 66606-1674 295-8448 3006840191 58 F 3006 89 AN
BOWEN MD, JUDITH M, PO BOX 829, 66601-0829 273-7500 4720820035 55 F 4720 84 P	CONROW MD, JEFFREY K, 823 MULVANE, 66606-1679 354-9591 1902770328 52 M 1902 0 IM
BOYER MD, DEBORAH A, 1700 W 7TH, 66606-1674 295-8448 3006830101 58 F 3006 89 AN	CONROY MD, ROBERT W, PO BOX 829, 66601-0829 273-7500 2604640281 38 M 2604 71 P
BRAHMAN MD, HERBERT D, 1700 SW 7TH, 66606-1674 295-8471 512700039 43 M 512 79 PATH	COOLEY MD, DENNIS M, 3500 SW 6TH STE B, 66606-2806 235-0335 1902770336 51 M 1902 79 PD
BRANDSTED MD, MARK W, 1001 SW GARFIELD AVE, 66604-1368 233-4256 1902761647 49 M 1902 78 U	COOLIDGE MD, THOMAS T, 1133 SW TOPEKA, 66604-0000 291-7000 1902590150 33 M 1902 60 GS
BRAUN MD, ROBERT W, 823 MULVANE 4TH FL, 66606-1679 354-9591 2803700063 44 M 2803 76 IM	COON MD, STEPHEN D, 1700 W 7TH, 66606-1674 295-8008 1902830479 56 M 1902 85 RO
BRIDWELL MD, RUSSELL E, 4715 W CEDAR CREST, 66606-2213 0 1902510075 26 M 1902 51 OO	COPPLE JR MD, HAL E, 4100 SW 15TH ST, 66604-4333 273-8224 3005780232 46 M 3005 84 PNP
BRODSKY MD, TRINA A, 634 MULVANE STE 104, 66606-1678 295-5330 1401840415 53 F 1401 0 OBG	COTTON MD, ROBERT T, 7520 OXFORDSHIRE RD, 66614-4654 0 1902450161 19 M 1902 45 OO
BRUNER JR MD, KENNETH W, 1125 SW GAGE BLVD #B, 66604-1797 271-6164 2401701373 44 M 2401 74 D	COULON MD, GERARD, 1700 SW 7TH ST, 66606-0000 295-8090 49550790032 53 M 2101 90 EM
BURNETT D O, MICHAEL E, 901 SW GARFIELD, 66606-0000 354-9591 0 55 M 2879 0 PUD	CRARY MD, JOHN E, 2310 SW MAYFAIR PL, 66611-2054 0 1902430250 18 M 1902 43 OO
BUSKIRK MD, JAMES R, PO BOX 829, 66601-0829 273-7500 2604763056 40 M 2604 0 P	CROUCH MD, STEVEN W, 4100 SW 15TH ST, 66604-4333 273-8224 1902760365 51 M 1902 77 PD
CACHIA MD, RICHARD M, 1700 SW 7TH ST, 66606-1690 295-8472 62701730017 51 M 62701 78 PATH	CROUCH MD, WILLIAM H, 5333 SW REEDER ST, 66604-2097 0 2802450217 20 M 2802 51 OO

CURTIS MD, JEFFERY L, 901 GARFIELD, 66606-1670

354-9591 1902810192  
55 M 1902 82 CD

DAMMON JR MD, JAMES W, 833 SW GARFIELD AVE, 66606-2701

233-1690 4812820422  
56 M 4812 89 CDTs

DATTOLO MD, RAYMOND, 634 MULVANE STE 203, 66606-1678

233-9643 55002820110  
55 M 55002 88 CD

DAUGHETY MD, TED W, 901 GARFIELD, 66606-1670

354-9591 4812740267  
49 M 4812 86 IM

DAVIS MD, CHESTER R, 1710 SW 10TH AVE #101, 66604-1365

232-6020 1902751889  
50 M 1902 76 FP

DE SILVA MD, MAHAZEN T, 823 MULVANE STE 275, 66606-1679

233-7138 22001680068  
43 M 22001 0 P

DELGADO MD, SERGIO, 634 MULVANE STE 200, 66606-1678

357-0352 2501620389  
37 M 2501 74 ORS

DELGADO MD, SERGIO V, PO BOX 829, 66601-0829

273-7500 64902810011  
57 M 64902 82 P

DONEPUDI MD, RAO S, 1700 W 7TH, 66606-1674

295-8448 49550740132  
49 M 49550 82 AN

DUNIVEN MD, PHILIP L, 823 SW MULVANE, 66606-1679

234-3451 4812770425  
52 M 4812 81 R

DURST JR MD, ROBERT D, 1706 SW TENTH, 66604-1306

357-5166 2803690980  
42 M 2803 72 D

EATON MD, EDWARD L, 823 MULVANE STE 275, 66606-1679

233-7138 401721134  
40 M 401 73 P

EBELING MD, JOHN D, 634 SW MULVANE STE 202, 66606-0000

323-3555 3901850428  
59 M 3901 92 NS

EDDS MD, BRECK A, 634 SW MULVANE ST #104, 66606-1678

295-5330 1902840547  
56 M 1902 88 OBG

EINSPAHR MD, DAVID E, 823 MULVANE 4TH FL, 66606-1679

259-9591 3005801990  
54 M 3005 87 ON

ELDER MD, D MIKEL, 823 SW MULVANE, 66606-1679

234-3451 1902690294  
41 M 1902 73 DR

EVANS MD, JOHN F, 1500 SW 10TH, 66604-1301

354-6000 2803700225  
42 M 2803 71 OBG

FAIRCHILD MD, RICHARD S, 901 GARFIELD, 66606-1670

354-9591 1902742120  
48 M 1902 0 END

FEAGAN MD, JERRY H, 2200 SW 6TH, 66606-1707

233-3555 1902630216  
39 M 1902 64 GE

FEIFAREK MD, MICHAEL J, 900 SW WASHBURN, 66606-1653

235-3322 5605820338  
50 M 5605 0 OPH

FERNANDEZ MD, LUIS A, 2707 W 13TH, 66604-2609

0 27501410751  
14 M 27501 68 OO

FIELD MD, RICHARD A, 823 SW MULVANE #230, 66606-1679

235-3451 1902550387  
29 M 1902 55 AN

FIELD-KRESIE MD, DEBBIE A, 800 SW LINCOLN ST, 66606-1598

233-5101 1902850488  
59 F 1902 88 OBG

FITZGERALD MD, DAVID A, 901 GARFIELD, 66606-1670

354-0550 1205700141  
41 M 1205 88 N

FLATT MD, DAVID R, 901 GARFIELD, 66606-0000

354-9591 1803750374  
45 M 1803 0 CD

FRANKLIN JR MD, BENJAMIN A, 823 SW MULVANE, 66606-1679

234-3451 1902760497  
45 M 1902 77 R

FREUND MD, WILLIAM L, 901 GARFIELD, 66606-1670

354-9591 1902790698  
54 M 1902 0 CD

FRYE MD, DOUGLAS D, 823 MULVANE STE 330, 66606-1679

345-8637 702820375  
53 M 702 91 OM

GABBARD MD, GLEN O, PO BOX 829, 66601-0829

273-7500 1601750950  
49 M 1601 76 P

GANDHI MD, SHANTIKUMAR K, 833 SW GARFIELD AVE, 66606-2701

233-1690 49501650250  
40 M 49501 78 TS

GARDNER MD, J DOUGLAS, 901 GARFIELD, 66606-1670

354-9591 1902760501  
51 M 1902 78 RHU

GAY MD, JOHN D, 823 SW MULVANE, 66606-1679

234-3451 4802680452  
42 M 4802 74 DR

GEIS MD, DICK A, 901 GARFIELD, 66606-1670

354-9591 1902730407  
47 M 1902 84 OM

GEIST MD, MICHAEL J, 9544 SW 45TH, 66610-9602

478-4344 1902850858  
58 M 1902 0 GP

GENDEL MD, JOSEPH E, PO BOX 4127, 66604-0127

0 4804370205  
12 M 4804 52 OO

GIESSEL MD, MICHAEL D, 823 MULVANE 4TH FL, 66606-1679

354-9591 1902740364  
48 M 1902 74 D

GIMPLE MD, KENNETH, 631 HORNE STE 200, 66606-1663

233-7491 1902710406  
45 M 1902 78 ORS

GIROUX MD, GUY M, 1700 W 7TH, 66606-1674

295-8000 3006840336  
57 M 3006 0 AN

GLEASON MD, JIMMIE A, 800 LINCOLN, 66606-1515

233-5101 1902580332  
33 M 1902 60 OBG

GOERING MD, EMIL L, 1615 SW 8TH ST, 66606-0000

233-5141 1902570329  
27 M 1902 57 IM

GRAYIB MD, ANTOINE S, 1625 OAKLEY, 66604-2664

0 60501460055  
18 M 60501 58 OO

GREENBERG MD, MARK G, 823 SW MULVANE, 66606-1679

234-3451 1611720633  
46 M 1611 76 R

GREENE MD, RUSSELL E, 1700 SW 7TH ST, 66606-1674

295-8000 515790187  
53 M 515 83 TR

GUTOVITZ MD, ALLEN L, 634 SW MULVANE ST STE 203, 66606-1678

233-9643 1611720668  
46 M 1611 79 CD

HACKER MD, ELAINE M, 3026 QUAIL CREEK DR, 66614-4132

0 2604500250  
25 F 2604 78 OO

HAGGERTY III MD PHD, JESSE C, 1505 SW 8TH ST, 66606-2727

354-5250 1205870454  
55 M 1205 92 FP



HALL MD, ROY P, 634 SW MULVANE ST STE 402, 66606-1678  
295-5310 5107850432  
59 M 5107 88 FP

HALLEY MD, M MARTIN, 901 SW GARFIELD AVE, 66606-1670  
233-1710 2401530579  
27 M 2401 59 TS

HAMILTON JR MD, JAMES J, 823 SW MULVANE ST STE 220, 66606-1679  
232-0444 1902810346  
55 M 1902 87 GPVS

HANSEN MD, ERIC E, 1504 SW 8TH ST, 66606-2714  
235-6600 64935840242  
51 M 64935 90 PM

HARRIS MD, HUBERT L, 200 SW FAIRLAWN RD, 66604-1399  
0 1803390301  
12 M 1803 49 OO

HARRIS MD, PATRICIA A, 1617 SW 26TH ST, 66611-1332  
0 1902540446  
29 F 1902 54 OO

HARRISON MD, HALL E, 901 SW GARFIELD AVE, 66606-1670  
354-9591 2802650313  
39 M 2802 72 IM

HARVEY MD, BRUCE E, 1500 SW 10TH AVE, 66604-1353  
354-6100 3005800616  
55 M 3005 0 EM

HARVEY MD, R CLAY, 823 SW MULVANE ST, 66606-1679  
234-3451 1902780773  
52 M 1902 79 R

HATCHER MD, ELIZABETH R, PO BOX 829, 66601-0829  
273-7500 2301870658  
45 F 2301 87 P

HEBBAR MD, SATYA N, 634 SW MULVANE ST STE 203, 66606-1678  
233-9643 49509630240  
39 M 49509 74 CD

HEDEGAARD MD, CHERYL K, 634 SW MULVANE ST STE 104, 66606-1678  
295-5330 3005830574  
46 F 3005 87 OBG

HEEB MD, CAMILLE S., 3500 SW 6TH, 66606-2806  
235-0335 1902790841  
44 F 1902 83 PD

HILL MD, ROBERT N, 901 GARFIELD, 66606-1670  
354-9591 1902670391  
14 M 1902 68 IM

HIRSCHBERG MD, J COTTER, PO BOX 829, 66601-0829  
273-7500 1602400103  
15 M 1602 52 CHP

HISZCZYNSKYJ MD, ROMAN, 1500 W TENTH, 66604-1301  
354-6031 1803660472  
35 M 1803 70 PATH

HOBBS MD, DONALD D, 2858 PLASS, 66611-1630  
0 2401540582  
28 M 2401 63 OO

HOLMES MD, ROBERT W, 901 GARFIELD, 66606-1670  
354-9591 1902770662  
52 M 1902 80 IM

HOSTETTER MD, M MORGAN, 800 SW LINCOLN ST, 66606-1598  
233-5101 1902691215  
46 F 1902 74 OBG

HOYT MD, ARTHUR W, 7300 SW KINGSWOOD CIR #5, 66614-4737  
0 2501400559  
14 M 2501 55 OO

HSU MD, CHENG H, 1516 W 6TH, 66606-1696  
232-1005 38504660173  
41 M 38502 74 U

HSU MD, SHIN-FU, 1001 SW GARFIELD AVE #203, 66604-1370  
232-0362 24402680209  
43 M 24402 0 OTO

HUANG MD, JONSON, 901 GARFIELD, 66606-1670  
357-6171 2701770474  
52 M 2701 81 N

HUSTON MD, JOSEPH W, 634 MULVANE STE 200, 66606-0000  
357-0352 1902620393  
35 M 1902 63 ORS

HUTTON MD, FREDERICK A, 1001 SW GARFIELD AVE #102, 66604-1372  
234-0553 6701580417  
29 M 6701 66 PS

ILIFF MD, R DOUGLAS, 1119 SW GAGE BLVD, 66604-1782  
271-6161 1902742260  
49 M 1902 80 FP

ILORETA MD, ALFREDO T, 1516 W 6TH, 66606-1696  
232-1005 74801710429  
47 M 74801 80 U

ISAACSON MD, RICHARD N, 1001 SW GARFIELD AVE #301, 66604-1368  
233-4256 2501750975  
48 M 2501 80 U

JACKSON JR MD, DONALD H, 634 MULVANE #203, 66606-1678  
233-9643 3515690424  
40 M 3515 84 CD

JACOBY II MD, ROBERT E, 901 SW GARFIELD, 66606-1670  
354-0570 2307720461  
46 M 2307 75 FP

JENSEN MD, ROBERT D, 1500 W TENTH, 66604-1301  
354-6031 3005790653  
53 M 3005 83 PATH

JONES MD, CLIFTON C, 823 MULVANE, 66606-1679  
354-9591 1902810460  
55 M 1902 0 ID

JOSEPH MD, BRIAN W, 823 MULVANE STE 275, 66606-1679  
233-7138 35205610012  
38 M 35205 74 CHP

JOSS MD, CHARLES S, 1400 STRATFORD RD, 66604-2584  
0 1606400612  
14 M 1606 40 OO

JOYCE MD, G BERNARD, 4929 W HILLS DR, 66606-0000  
0 1902440808  
17 M 1902 44 OO

KATZ MD, DANIEL A, PO BOX 829, 66601-0829  
273-7500 4802770982  
52 M 4802 0 PDN

KATZ MD, JEROME B, BOX 829, 66601-0829  
273-7500 2101441175  
22 M 2101 52 P

KAVEL MD, KARL K, 1123 SW GAGE BLVD, 66604-1781  
273-9999 3605640248  
36 M 3605 72 PDA

KELLY MD, DAN A, 4100 SW 15TH ST, 66604-4333  
273-8224 2803640265  
39 M 2803 69 PD

KENNEDY MD, JENNIFER E, PO BOX 829, 66601-0829  
273-7500 4813820973  
57 F 4813 86 P

KEYS JR MD, ROBERT C, 823 SW MULVANE #230, 66606-1679  
235-3451 1902620431  
36 M 1902 64 AN

KIM MD, YONG W, 631 HORNE STE 110, 66606-1663  
232-6964 58302490013  
28 M 58302 61 IM

KINDLING MD, PAUL H, 901 GARFIELD, 66606-1670  
233-1710 3545610417  
30 M 3545 68 TS

KIRKEGAARD MD, RODGER S, 2205 SW ARVONIA PL, 66614-4251  
0 1803560451  
30 M 1803 64 OO

KLEINHOLZ JR MD, EMIL JOHN, 634 MULVANE #201, 66606-1678  
232-1227 3503650320  
39 M 3503 79 IM

KLEMMER MD, HERBERT, 1259 SW PEMBROKE LN, 66604-2532  
0 4102370517  
11 M 4102 56 OO

KNAPPENBERGER MD, KURT R, 631 HORNE STE 200, 66606-1663  
 233-7491 1902800651  
 54 M 1902 88 ORS

KOONTZ MD, JUDITH A, BOX 829, 66601-0829  
 273-7500 1902750823  
 49 F 1902 81 CHP

KOOSER MD, JUDITH A, 1700 W 7TH, 66606-1674  
 273-7500 1601810308  
 47 F 1601 85 TR

KOSSOY D O, ALLEN F, 901 GARFIELD, 66606-1670  
 354-9591 2878810344  
 53 M 2878 0 A

KOVARIK MD, ERNEST D, 620 SE MADISON STE 154, 66607-1118  
 233-1800 3005640317  
 36 M 3005 71 OPH

KOWALSKI MD, STEPHEN F, 1417 SW MACVICAR AVE, 66604-2777  
 273-7500 3901810876  
 55 M 3901 83 P

KRESIE MD, RANDALL J, 631 HORNE STE 130, 66606-1663  
 233-0011 1902841055  
 58 M 1902 88 OPH

KROLL MD, HARRY G, 2912 CEDAR COVE CT, 66614-4138  
 0 1602500337  
 24 M 1602 57 OO

LACCHEO MD, MICHAEL L, 1119 SW GAGE BLVD, 66604-1782  
 271-6000 3840761192  
 51 M 3840 82 FP

LAI MD, MAX G, 1710 SW 10TH AVE #200, 66604-1331  
 354-4465 24405720031  
 45 M 24405 81 U

LANG MD, CLAYTON A, 1700 W 7TH, 66606-1674  
 232-6633 1902650497  
 39 M 1902 88 AN

LAUNEY MD, WALTON S, 823 MULVANE, 66606-1679  
 234-3451 4804752094  
 39 M 4804 81 R

LEE MD, SONG DOW, 823 SW MULVANE #230, 66606-1679  
 235-3451 24405680137  
 43 M 38505 74 AN

LEE MD, SONG PING, 823 MULVANE STE 250, 66606-1679  
 233-6001 38502610462  
 34 M 38502 74 OTO

LEIFER MD, WILLIAM N, 1500 W 10TH, 66604-1301  
 354-6031 1902730652  
 47 M 1902 78 PATH

LEIKER MD, JOSEPH, 1133 TOPEKA BLVD, 66610-0000  
 291-8448 1902740674  
 48 M 1902 0 IM

LENTZ MD, WILLIAM R, 2930 SW WANAMAKER DR STE 5, 66614-4116  
 272-2332 1902530548  
 24 M 1902 53 FP

LEPSE MD, PETER S, 909 MULVANE, 66606-1682  
 357-0301 1803800932  
 57 M 1803 0 ORS

LESSENDEN JR MD, C M, 900 SW 31ST #339, 66611-0000  
 0 1902430454  
 18 M 1902 43 OO

LEVY MD, EDWIN Z, PO BOX 4311, 66604-0311  
 273-5610 1606540783  
 29 M 1606 59 P

LIESMANN MD, JEAN E, 823 SW MULVANE ST 4TH FL, 66606-1679  
 354-9591 1902742286  
 49 F 1902 77 IM

LISTERMAN MD, JOHN C, PO BOX 239, 66629-0001  
 291-8221 2803741045  
 42 M 2803 83 FP

LOGAN MD, WILLIAM S, PO BOX 829, 66601-0829  
 273-7500 4812771596  
 49 M 4812 84 P

LUDWIG MD, CAROL S, 634 SW MULVANE STE 402, 66606-0000  
 295-5310 1902841322  
 57 F 1902 0 FP

LUI MD, NASON, 1516 W 6TH, 66606-1696  
 233-1747 1606770819  
 48 M 1606 83 GPVS

LYNCH MD, JOHN A, 909 MULVANE, 66606-1682  
 357-0301 2834550591  
 30 M 2834 64 ORS

MAGEE D O, RAYMOND D, 634 MULVANE, 66606-0000  
 295-5310 0  
 50 M 3979 0 FP

MARPLES MD, BRADLEY W, 901 GARFIELD, 66606-1670  
 354-9591 1902831131  
 56 M 1902 86 IM

MARTIN MD, JEFFERY L, 1700 W 7TH, 66606-0000  
 295-8090 1902781125  
 50 M 1902 0 EM

MARTIN MD, WILLIAM O, 3643 YORKWAY, 66604-2511  
 0 1902440956  
 19 M 1902 44 OO

MCCARTER MD, DUANE K, 2101 SW 10TH AVE, 66604-1407  
 233-8979 1902580600  
 26 M 1902 65 IM

MCCARTHY MD, AILEEN C, 901 GARFIELD, 66606-1670  
 354-9591 1902831173  
 57 F 1902 0 IM

MCCOY MD, MICHAEL T, 823 MULVANE #370, 66606-1679  
 233-0117 1902752389  
 49 M 1902 80 ORS

MCELROY MD, ROBERT T, 823 MULVANE STE 220, 66606-1679  
 232-0444 1902610568  
 35 M 1902 62 GS

MCGOVERN JR MD, JAMES L, 1700 W 7TH, 66606-0000  
 295-8090 1902791309  
 51 M 1902 0 EM

MCKINNEY D O, SHARON L, 631 SW HORNE ST STE 220, 66606-1663  
 354-1299 2878830124  
 41 F 2878 0 PM

MEIDINGER MD, RICHARD, 823 SW MULVANE STE 1, 66606-1679  
 234-3451 1902650594  
 39 M 1902 66 DR

MENNINGER MD, ROBERT G, PO BOX 829, 66601-0829  
 232-7214 3545520493  
 22 M 3545 53 P

MENNINGER MD, ROY W, BOX 829, 66601-0829  
 273-7500 3520510515  
 26 M 3520 62 P

MENNINGER MD, W WALTER, PO BOX 829, 66601-0829  
 273-7500 3520570526  
 31 M 3520 59 P

MEYER MD, O WARREN, 634 MULVANE #203, 66606-1678  
 233-9643 1902742189  
 49 M 1902 80 CD

MHATRE MD, VIJAY R, 620 SE MADISON PO BOX 1979, 66601-1979  
 232-4248 49528740111  
 49 M 49528 84 IM

MILLS JR MD, PHILIP E, 901 GARFIELD, 66606-1670  
 354-0550 1902640637  
 36 M 1902 65 N

MODLIN MD, HERBERT C, PO BOX 829, 66601-0829  
 273-7500 3005380366  
 13 M 3005 50 P

MORRIS MD, MERLE D, 2800 MAC VICAR, 66611-1705  
 0 1902450455  
 21 M 1902 45 OO

MORRISON MD, GRACE A, 800 SW LINCOLN ST, 66606-1598  
 233-5101 1902800871  
 48 F 1902 81 OBG



MORRISON MD, MICHAEL R, 800 SW LINCOLN ST, 66606-1598  
 233-5101 1902760985  
 50 M 1902 78 OBG

MUELLER MD, ARNOLD V, 5043 SW CEDAR CREST, 66606-2219  
 0 3005570441  
 31 M 3005 58 OO

MURPHY MD, MICHAEL J, 901 SW GARFIELD AVE, 66606-1670  
 354-0570 3005830957  
 57 M 3005 89 FP

MYERS IV MD, PERCY C, 634 MULVANE STE 307, 66606-1678  
 232-6633 1902750866  
 46 M 1902 0 AN

MYERS MD, JO ANN, 303 YORKSHIRE, 66606-0000  
 0 1902530602  
 28 F 1902 53 P

NABOURS MD, RICHARD D, 4228 W 29TH ST TER, 66614-2222  
 272-7190 1902541043  
 27 M 1902 54 FP

NANCE MD, JOEL H, PO BOX 829, 66601-0829  
 273-7500 0  
 42 M 3546 78 P

NATHAN MD, WILLIAM A, PO BOX 829, 66601-0829  
 273-7500 3503720468  
 48 M 3503 0 CHP

NEWT D O, MARK S, 620 SE MADISON, 66607-0000  
 232-4248 2878780658  
 49 M 2878 92 GP

NICE MD, G WILLIAM, 915 BUCHANAN, 66606-1429  
 0 1902460434  
 22 M 1902 46 OO

NICHOLS D O, DAVID J, 3500 SW 6TH, 66606-2806  
 235-0335 1875800732  
 55 M 1875 0 PD

NORA, JOSEPH T, 1504 SW 8TH, 66604-0000  
 232-8576 0  
 53 M 1002 92 PM

NOVOTNY MD, PETER C, PO BOX 829, 66601-0829  
 273-7500 15407550029  
 30 M 15407 63 P

O'CALLAGHAN MD, WILLIAM K, 901 GARFIELD, 66606-1670  
 354-9591 1002710834  
 45 M 1002 77 IM

O'KEEFE D O, CATHERINE M, 1700 W 7TH, 66606-0000  
 295-8090 4177771258  
 48 F 4177 0EM

O'NEIL MD, ROBERT H, 901 GARFIELD, 66606-1670  
 354-9591 1902450544  
 20 M 1902 45 IM

OWEN III MD, JAMES W, 823 SW MULVANE, 66606-1679  
 234-3451 2802790778  
 54 M 2802 83 DR

PALMBERG MD, KENT E, 901 GARFIELD, 66606-1670  
 354-9591 1902742481  
 49 M 1902 76 IM

PARMAN MD, ROBERT D, 1213 SW 29TH TER #1, 66611-2700  
 0 1902540705  
 27 M 1902 54 OO

PARR JR MD, HAROLD E, 4100 SW 15TH ST, 66604-4333  
 273-8224 1902821470  
 51 M 1902 0 PD

PARULKAR MD, DEEPAK S, 823 MULVANE L-L, 66606-1679  
 235-3451 49517720100  
 49 M 49517 77 AN

PASCUA MD, PERCIVAL G, BOX 829, 66601-0829  
 273-7500 74808621537  
 39 M 74808 80 IM

PATEL MD, MAHENDRA N, 620 SE MADISON ST, 66607-1118  
 232-4248 91708740042  
 48 M 91708 0 IM

PATEL MD, VINOD, PO BOX 2401, 66601-2401  
 0 49531700031  
 47 M 49531 74 N

PATRICK MD, FRED E, 4100 SW 15TH ST, 66604-4333  
 273-8224 1902710848  
 45 M 1902 72 PD

PAYNE MD, ROBERT R, 631 HORNE STE 200, 66606-1663  
 233-7491 1902550891  
 29 M 1902 55 ORS

PENZLER MD, CINDY E, 631 HORNE STE 130, 66606-1663  
 233-0011 1902850429  
 59 F 1902 89 OPH

PERDUE II MD, W LANG, 631 SW HORNE ST STE 410, 66606-1663  
 234-6767 1902742197  
 49 M 1902 81 GS

PETERSON MD, ROBERT L, 1500 SW 10TH AVE, 66604-1301  
 354-6100 1902620679  
 36 M 1902 63 EM

PETERSON MD, VERNON J, 823 SW MULVANE ST, 66606-1679  
 234-3451 512680542  
 42 M 512 73 R

PETRIK MD, EDWIN L, 823 SW MULVANE ST 4TH FL, 66606-1679  
 354-9591 1902640718  
 35 M 1902 65 IM

PETTERSON MD, DENNIS C, 823 SW MULVANE ST, 66606-1679  
 234-3451 1902741981  
 49 M 1902 76 R

PETTERSON MD, O'RUTH S, 846 SW WATSON AVE, 66606-1978  
 00 19 F 1902 OO

PFUETZE MD, ROBERT E, 1800 SW WESTWOOD DR, 66604-3280  
 0 1902350337  
 9 M 1902 35 OO

PIERCE MD, CHARLES F, 4108 SW EMLAND DR #3, 66606-2121  
 0 4101510862  
 24 M 4101 55 OO

PIERCE MD, DONALD R, 5035 SW 23RD ST, 66614-1407  
 0 5101490329  
 23 M 5101 50 OO

POLLY MD, RICHARD E, 909 SW MULVANE ST, 66606-1682  
 357-0301 1803680899  
 42 M 1803 75 ORS

PORTER MD, ROBERT D, 901 SW GARFIELD AVE, 66606-1670  
 354-9591 2802670527  
 41 M 2802 73 IM

POULTON MD, THOMAS J, 1700 SW 7TH ST, 66606-1674  
 295-8000 3840751707  
 50 M 3840 0 AN

POWELL II MD, BENSON M, PO BOX 330, 66601-0330  
 354-9504 1606490743  
 26 M 1606 55 TS

POWELL MD, WILLIAM R, 2778 SW MACVICAR AVE, 66611-1703  
 0 1902540756  
 30 M 1902 54 OO

PRESTON MD, RALPH R, 5025 BRENTWOOD RD, 66606-2209  
 0 1902441243  
 19 M 1902 44 OO

PROKOP MD, BRADFORD S, 920 SW WASHBURN AVE, 66606-1527  
 233-3900 1606570909  
 32 M 1606 61 OPH

RAINBOW-EARHART MD, KATHRYN A, 2916 KENTUCKY, 66605-1466  
 0 4707480446  
 21 F 4707 63 OO

RAJU MD, A S PADMA, 1710 SW 10TH AVE #208, 66604-1337  
 234-3211 49509610052  
 39 M 49509 81 TS

RAMSEY MD, BARTLETT W, 512 DANBURY LN, 66606-2230  
 0 1902500576  
 25 M 1902 50 OO

RANDALL MD, GORDON R, 823 SW MULVANE, 66606-1679  
234-3451 4706781833  
50 M 4706 83 R

RANDELL MD, EDGAR C, 800 SW LINCOLN ST, 66606-1598  
233-5101 3005660598  
41 M 3005 71 OBG

RANSOM MD, JAMES H, 1123 SW GAGE BLVD, 66604-1781  
273-9999 1803620829  
36 M 1803 67 A

RATHBUN MD, KATHARINE C, 1615 SW 8TH, 66606-1633  
233-8961 2501771697  
50 F 2501 91 PH

REINKING MD, VICTOR E, 631 HORNE STE 110, 66606-1663  
233-5084 1902520526  
26 M 1902 52 IM

REYMOND MD, RALPH D, 1700 W 7TH, 66606-1674  
295-8011 2301670853  
37 M 2301 72 R

RHOADS MD, JAMES P, 3768 SW WOODVIEW DR, 66601-0110  
0 3520600671  
34 M 3520 67 OO

RHOADS MD, JEFFREY P, 823 MULVANE 4TH FL, 66606-1679  
354-9591 1902841519  
56 M 1902 85 IM

RICCI MD, ROBERT L, 823 MULVANE STE 400, 66606-1679  
354-9591 1902752656  
50 M 1902 76 IM

ROBERTS MD, WARREN E, 2123 GAGE BOX 4047, 66604-0047  
272-3511 1902570728  
25 M 1902 57 FP

ROBINSON MD, DAVID B, 800 SW LINCOLN ST, 66606-1598  
233-5101 1902730954  
47 M 1902 74 OBG

ROBINSON MD, SCOTT A, 1700 SW 7TH ST, 66606-0000  
295-8090 1902832315  
57 M 1902 0 EM

ROCKEFELLER MD, JOHN D, 901 GARFIELD, 66606-1670  
354-7591 0  
52 M 1902 0 IM

ROEDER MD, ROBERT E, 901 GARFIELD, 66606-1670  
354-9591 1902670846  
40 M 1902 68 CD

ROSEN MD, DONALD E, PO BOX 829, 66061-0000  
273-7500 1902842175  
56 M 1902 88 P

ROTERT MD, LARRY, 1001 SW GARFIELD AVE #301, 66604-1368  
233-4256 3005660636  
38 M 3005 77 U

ROY MD, WILLIAM R, 6137 SW 38TH TER, 66610-1307  
0 1606490786  
26 M 1606 54 OO

SANCHEZ MD, ROGELIO, 1516 W 6TH, 66606-1696  
232-1005 64901610531  
31 M 64901 70 U

SARGENT MD, JOSEPH D, PO BOX 829, 66601-0829  
273-7500 2501581324  
32 M 2501 66 IM

SAWYER MD, TIMOTHY T, 823 MULVANE, 66606-1679  
354-9591 3901801214  
54 M 3901 0 D

SAYLOR MD, EDWARD H, 3500 SW 6TH, 66606-2806  
235-0335 1902650799  
39 M 1902 66 PD

SAYLOR MD, MARK, 1710 SW 10TH AVE #208, 66604-1337  
234-3211 1902660948  
37 M 1902 67 GS

SCAMMAN MD, W WIKE, 2715 SW 29TH ST #C, 66614-2044  
272-0122 4705570367  
32 M 4705 64 PATH

SCHLOESSER MD, HARVEY L, 1914 WARNER CT, 66604-3267  
0 3901510538  
21 M 3901 55 OO

SCHLOESSER MD, PATRICIA T, 1914 WARNER CT, 66604-3267  
0 3901490405  
24 F 3901 53 OO

SCHLOESSER MD, PETER E, 823 SW MULVANE ST, 66606-1679  
234-3451 1902831599  
58 M 1902 87 DR

SCHMIDT MD, MICHAEL J, 631 HORNE STE 200, 66606-1663  
233-7491 1902791597  
54 M 1902 84 ORS

SCHRAM MD, PETER C, PO BOX 829, 66601-0829  
273-7500 2507690826  
39 M 2507 76 P

SEHDEV MD, JOAN, 631 HORNE STE 310, 66606-1663  
233-3553 6101630275  
40 F 6101 74 FP

SELLERS MD, JEFF D, 823 MULVANE STE 230, 66606-1679  
235-3451 1902860001  
55 M 1902 90 AN

SHEAFOR MD, DOUGLAS, 823 MULVANE STE 275, 66606-1679  
233-7138 1902600775  
34 M 1902 61 P

SHEEHY MD, PATRICK G, 901 GARFIELD, 66606-1670  
354-9591 5605801279  
54 M 5605 86 CD

SHELTON MD, STEPHEN E, 823 MULVANE STE 275, 66606-1679  
233-7138 702610591  
35 M 702 67 P

SHERWOOD JR MD, CLARENCE E, 3226 TIMBERLAKE LN, 66614-4515  
0 702530547  
22 M 702 62 OO

SHEU MD, W ERIC, 823 SW MULVANE #230, 66606-1679  
235-3451 24350670072  
43 M 38505 82 AN

SIMPSON MD, WILLIAM S, PO BOX 829, 66601-0829  
0 6001480071  
24 M 6001 63 OO

SISK MD, PHILLIP B, 823 SW MULVANE, 66606-1679  
234-3451 1803560869  
32 M 1803 64 R

SLAUGHTER, JERRY, 623 SW 10TH AVE, 66612-1615  
235-2383 0  
0 M 0 0

SNARR MD, JACK W, 823 SW MULVANE, 66606-1679  
234-3451 6201650311  
41 M 6201 77 DR

SPANGLER MD, HENRY E, 901 GARFIELD, 66606-1670  
354-9591 3005821311  
56 M 3005 86 IM

SPENCER MD, MILLARD C, 2834 SW BURLINGAME RD, 66611-1316  
0 1902551073  
28 M 1902 55 OO

SPENCER MD, WAYNE E, 2200 SW 6TH, 66606-1707  
233-9686 1902640840  
38 M 1902 65 GE

STEIN MD, JOSEPH M, 901 GARFIELD, 66606-1670  
354-0550 3519471069  
24 M 3519 56 N

STOCK MD, KARL W, 2740 BURLINGAME RD, 66611-1314  
0 2834370975  
13 M 2834 44 OO

STUART MD, REGINA K, 823 MULVANE STE 220, 66606-1679  
232-0444 2401851448  
59 F 2401 0 GPVS

SUFI MD, M ASHRAF, 2200 SW 6TH #104, 66606-1707  
354-8518 70402680189  
43 M 70402 77 GE



SUFI MD, KAISER A, 7241 FOUNTAINDALE, 66614-4629  
 354-8518 70402680294  
 44 F 70402 77 PATH

SUNDBYE MD, KEVIN R, 901 GARFIELD, 66606-1670  
 354-9591 1902831785  
 57 M 1902 89 IM

SWOGGER JR MD, GLENN, PO BOX 829, 66601-0829  
 273-7500 3806600724  
 35 M 3806 72 P

SYNOVEC MD, MARK S, 1500 SW 10TH, 66604-1301  
 354-6963 3005861313  
 59 M 3005 0 PATH

TAGUE MD, RICK R, 1700 W 7TH, 66606-0000  
 295-8090 2101841297  
 58 M 2101 92 EM

TAHERNIA MD, CYRUS, 1500 SW 10TH, 66604-1301  
 354-9599 51701560446  
 32 M 51701 88 PDC

TAKAHASHI MD, TETSURO, PO BOX 829, 66601-0829  
 273-7500 57203600145  
 32 M 57211 75 P

TARGOWNIK MD, KARL K, 1218 W TENTH, 66604-1204  
 0 40710490181  
 15 M 40710 59 OQ

TARNOWER MD, WILLIAM, 2112 CREST DR, 66614-1424  
 0 4802480721  
 21 M 4802 53 OO

TAWADROS MD, MARY L, 1615 W 8TH, 66606-0000  
 233-5141 91504610018  
 38 F 91504 76 FP

TEETER MD, SCOTT M, 823 SW MULVANE ST #330, 66606-1679  
 354-9591 1902831807  
 57 M 1902 0 IM

TEMPERO MD, STEPHEN J, 823 SW MULVANE ST, 66606-1679  
 234-3451 1606671012  
 42 M 1606 72 R

THOMS MD, NORMAN W, 901 SW GARFIELD AVE, 66606-1670  
 233-1710 2501591605  
 34 M 2501 75 TS

THURSTON MD, DAVID E, 631 HORNE ST STE 200, 66606-1663  
 233-7491 1902551138  
 29 M 1902 55 ORS

TIETZE MD, DENNIS D, 634 SW MULVANE ST STE 402, 66606-1678  
 295-5310 1902781826  
 50 M 1902 79 FP

TOZER MD, RICHARD C, 1207 SW 29TH ST A-10, 66611-2185  
 0 4102451363  
 19 M 4102 53 OO

TRACY MD, TERRY A, 2947 SW WANAMAKER DR, 66614-5322  
 0 2803610579  
 35 M 2803 68 OBG

TRAVIS MD, JOHN W, 15 SW PEPPER TREE LN, 66611-2056  
 0 1606551262  
 29 M 1606 61 OO

TREGER MD, NEWMAN V, 935 SW GARFIELD AVE, 66606-1650  
 0 1902400547  
 16 M 1902 40 OO

TSAI MD, CHIA-HSUN, 823 SW MULVANE ST #230, 66606-1679  
 235-3451 24406730111  
 47 M 24406 88 AN

TUTUSKA MD, PETER J, 901 SW MULVANE ST, 66606-1670  
 233-1710 3503821205  
 56 M 3503 89 CDTs

UHR MD, NATHANIEL, 3230 SW 18TH ST, 66604-3237  
 0 3519210656  
 0 M 3519 50 OO

VAN SICKLE MD, GREGGORY J, 3500 SW 6TH ST, 66606-2806  
 235-0335 1606751512  
 49 M 1606 80 PD

VANDEGARDE MD, LARRY D, 800 SW LINCOLN ST, 66606-1598  
 233-5101 1803661045  
 41 M 1803 72 OBG

VOGEL MD, STANLEY J, 823 SW MULVANE ST 4TH FL, 66606-1679  
 354-9591 2802700906  
 44 M 2802 78 ON

VOTH MD, ERIC A, 901 SW GARFIELD AVE, 66606-1670  
 354-9591 1902810788  
 55 M 1902 84 IM

VOTH MD, HAROLD M, 901 GARFIELD, 66606-0000  
 354-0545 1902470677  
 22 M 1902 0 P

WALIA MD, JAG S, 2200 SW 10TH AVE, 66604-3904  
 234-8601 49529730291  
 50 M 49515 84 FP

WALL MD, TERRY J, 1034 SW MULVANE ST #13, 66604-1461  
 295-8008 1902821925  
 54 M 1902 86 RO

WALLACE MD, BRETT E, 909 MULVANE, 66606-1682  
 357-0301 4813801251  
 55 M 4813 0 ORS

WALLACE MD, LEO F, 5500 W 24TH, 66614-1736  
 0 1902410739  
 17 M 1902 41 OO

WALLS MD, WILLIAM J, 823 SW MULVANE, 66606-1679  
 234-3451 2834661121  
 39 M 2834 72 DR

WALZ MD, ROYCE C, 2200 SW GAGE, 66622-0000  
 272-3111 15407600042  
 27 M 15407 62 P

WANLESS MD, KIRK M, 823 MULVANE STE 325, 66606-1679  
 232-8188 2803740898  
 44 M 2803 81 OTO

WARD MD, HOWARD N, 823 MULVANE 4TH FL, 66606-1679  
 354-9591 1606621228  
 37 M 1606 70 HEM

WARE MD, LUCILE M, 1925 WAYNE AVE, 66604-0000  
 0 3501531102  
 29 F 3501 66 OO

WARRICK MD, DAVID A, 620 SE MADISON PO BOX 1979, 66601-1979  
 232-4248 3843760596  
 49 M 3843 79 IM

WATKINS MD, STEVEN C, 901 GARFIELD, 66606-1670  
 354-9591 1902741841  
 49 M 1902 76 END

WAUGH MD, CHARLES W, 823 SW MULVANE ST #230, 66606-1679  
 235-3451 1902841900  
 57 M 1902 0 AN

WEAVER MD, WALTER D, 900 WASHBURN ST, 66606-1653  
 233-3636 1902691053  
 41 M 1902 70 OPH

WEBER II MD, RALPH H, HMO KS PO BOX 110 COST CTR 485, 66601-0110  
 291-8742 3005750996  
 44 M 3005 88 PD

WEBER MD, DARRELL J, 1620 LAKESIDE DR, 66604-2582  
 0 1902441570  
 15 M 1902 44 OO

WEEKS MD, STACY S, 901 GARFIELD, 66606-1670  
 354-9591 1902860002  
 58 F 1902 0 IM

WELCH MD, WADE B, 901 SW GARFIELD AVE, 66606-0000  
 354-0550 0  
 59 M 1902 0 N

WELSH MD, NANCY J, 2200 SW GAGE BLVD, 66622-0002  
 272-3111 3840631329  
 39 F 3840 84 IM

WERNER MD, JAMES P, 823 MULVANE, 66606-1679  
 234-3451 1601841149  
 58 M 1601 88 DR

WILEY MD, THOMAS M, 823 SW MULVANE STE 280, 66606-1679  
 235-0202 1902861951  
 59 M 1902 88 OBG

WILLIAMS MD, CARL M, 7505 SW ROBIN HOOD CT, 66614-0000  
 232-6633 1902881871  
 55 M 1902 0 AN

WILLIAMS MD, GUY A, 1500 SW 10TH AVE, 66604-1353  
 354-6100 1003814152  
 56 M 1003 91 FP

WOOD MD, EDWARD R, 901 GARFIELD, 66606-1670  
 354-9591 1902751404  
 49 M 1902 0 IM

WRIGHT MD, GEORGE W, 901 SW GARFIELD, 66606-1695  
 354-9541 0  
 57 M 1902 93 FP

WYNNE MD, ALAN G, 901 GARFIELD, 66606-0000  
 354-9591 2803851096  
 59 M 2803 0 END

YEH MD, ROBERT M, 823 MULVANE STE 230, 66606-1679  
 235-3451 24405730061  
 47 M 24405 82 AN

YORKE JR MD, CRAIG H, 634 SW MULVANE STE 202, 66606-1678  
 232-3555 2401741367  
 48 M 2401 80 NS

YOUNG MD, PAUL E, 823 MULVANE #240, 66606-1679  
 233-4927 2407751313  
 42 M 2407 80 OPH

YOUNG MD, THEODORE E, 4130 TWILIGHT DR #123, 66614-3409  
 0 2307460745  
 22 M 2307 51 OO

ZACHARIAS MD, DAVID LLOYD, 1320 PEMBROKE LN, 66604-2583  
 0 1902531005  
 26 M 1902 53 OO

ZERBE MD, KATHRYN, BOX 829, 66601-0829  
 273-7500 4113781772  
 51 F 4113 79 P

ZIMMERMAN MD, WILLIAM H, 1551 SW WESTOVER RD, 66604-2575  
 0 3006520676  
 20 M 3006 56 OO

### **TOWANDA — 316** *(Sedgwick County Medical Society)*

NYBERG MD, FREDRIK F, ROUTE 1, 67144-9801  
 0 2101460838  
 22 M 2101 47 OO

### **TRIBUNE — 316** *(Southwest Kansas Medical Society)*

MOSER JR MD, ROBERT P, 308 E GREELEY AVE, 67879-0000  
 376-4251 1902851263  
 58 M 1902 90 FP

### **ULYSSES — 316** *(Southwest Kansas Medical Society)*

BREWER MD, MARSHALL A, 223 N MAIN, 67880-2130  
 356-1261 1902460078  
 19 M 1902 46 FP

TILLOTSON MD, DON R, 223 N MAIN, 67880-2130  
 356-1261 1902650942  
 32 M 1902 66 FP

### **VALLEY CENTER — 316** *(Sedgwick County Medical Society)*

DANIELS MD, ROBERT M, 130 MILES AVE, 67147-2037  
 0 1902540187  
 24 M 1902 54 OO

### **WAKEENEY — 913** *(Central Kansas Medical Society)*

HAMILTON MD, JAMES J, 323 RUSSELL AVE, 67672-2184  
 743-2124 1902550468  
 30 M 1902 55 FP

LOCKE MD, MARLIN K, 323 RUSSELL AVE, 67672-2184  
 743-2124 1902831068  
 56 M 1902 0 FP

### **WAMEGO — 913** *(Pottawatomie County Medical Society)*

ATWOOD MD, JEFF B, 711 GENN DR, 66547-1179  
 456-2207 1902870080  
 61 M 1902 0 FP

BORGENDALE MD, LLEWELLYN V, PO BOX 7, 66547-0007  
 456-2291 1902600082  
 29 M 1902 61 FP

BRADEN MD, BILL L, 705 COUNTRY CLUB CIR, 66547-1146  
 456-2291 1902600091  
 31 M 1902 61 FP

CLARK MD, LAURENCE A, PO BOX 7, 66547-0007  
 0 1902420122  
 12 M 1902 42 OO

TACKETT MD, ROBERT J, 711 GENN DR, 66547-1179  
 456-2207 1902871728  
 61 M 1902 0 FP

### **WASHINGTON — 913** *(Northeast Kansas Medical Society)*

HODGSON MD, DAVID K, 107 E THIRD, 66968-1919  
 325-2259 1902741581  
 49 M 1902 80 FP

### **WATHENA — 913** *(Northeast Kansas Medical Society)*

PETERSON JR MD, EVAN A, PO BOX 99, 66090-0099  
 989-3122 1803550715  
 24 M 1803 56 FP

### **WELLINGTON — 316** *(Cowley County Medical Society)*

ANDERSON MD, LARRY R, 1323 N A ST, 67152-4350  
 326-3301 1902730032  
 43 M 1902 74 FP

COLE MD, WARD M, 1324 N CHERRY ST, 67152-2815  
 0 1902360073  
 8 M 1902 36 OO

MCCORMICK MD, EUGENE CARL, PO BOX 706, 67152-0706  
 326-3914 1902560722  
 31 M 1902 56 GP

NALDOZA JR MD, FAUSTINO M, 1323 N A ST STE A, 67152-4350  
 326-8171 74801653719  
 38 M 74801 74 GS

PEDRAZA MD, HERNANDO, PO BOX 476, 67152-0476  
 326-5026 26404560106  
 28 M 26404 72 R



WEIGAND MD, JOEL T, 1323 N A ST, 67152-4350  
326-3301 1902701199  
43 M 1902 71 FP

**WICHITA — 316**  
**(Sedgwick County Medical Society)**

ABAY MD, EUSTAQUIO O, 818 N EMPORIA ST STE 301, 67214-3727  
267-5800 74801730578  
49 M 74801 0 NS

ABBAS MD, DILAWER H, 1515 S CLIFTON AVE STE 360, 67218-2953  
686-2831 70402700091  
45 M 70402 77 N

AGUSTIN MD, CONRADO M, 1126 S CLIFTON AVE, 67218-2913  
683-3389 74807620090  
38 M 74807 74 OBG

AHLSTRAND MD, RICHARD A, 3243 E MURDOCK ST STE 104, 67208-3018  
685-2711 3005670020  
41 M 3005 75 R

AHLSTROM MD, NANCY G, 1035 N EMPORIA ST STE 105, 67214-2938  
263-7285 1902850011  
59 F 1902 90 IM

ALDOROTY MD, NEIL, 1725 E DOUGLAS AVE, 67211-1610  
264-8989 64914753943  
46 M 64914 83 P

ALEXANDER MD, SHIRLEY J F, 8911 E ORME ST STE D, 67207-2473  
686-5195 1902871451  
58 F 1902 88 P

ALFONSO MD, MANUEL, 3311 E MURDOCK ST, 67208-3079  
689-9445 84710660432  
37 M 84710 72 AN

ALLEN MD, PHILLIP M, 1826 FARMSTEAD, 67214-4910  
0 2401540035  
27 M 2401 81 OO

ALLEN MD, STEVEN W, 3311 E MURDOCK ST, 67208-3079  
689-9442 0  
60 M 1902 91 PDC

ALMONTE MD, PRISCILLA C, 1120 S CLIFTON AVE, 67218-2913  
681-2108 74801671954  
44 F 74801 78 AN

ALMONTE MD, RODOLFO O, 1515 S CLIFTON AVE STE 480, 67218-2954  
686-3791 74801644353  
39 M 74801 78 OBG

AMMAR MD, ALEX D, 818 N EMPORIA ST STE 200, 67214-3788  
263-0296 5101760059  
51 M 5101 81 GPVS

AMSTUTZ MD, SAMUEL W, 655 N WOODLAWN ST, 67208-3648  
684-5158 1601800027  
53 M 1601 0 OPH

ANDERSON MD, DAVID J, 1650 S GEORGETOWN ST STE 200, 67218-4127  
686-7327 1902810893  
54 M 1902 84 AN

ANDERSON MD, JAMES D, 3243 E MURDOCK ST STE 500, 67208-3008  
688-7300 1902830045  
57 M 1902 84 IM

ARGOSINO MD, RODOLFO, 1148 S HILLSIDE ST STE 106, 67211-4005  
683-6506 74801634056  
40 M 74801 77 GS

ARMATO D O, ANDREW A, 144 S HILLSIDE, 67211-0000  
685-9289 2879580091  
26 M 2879 77 DR

ARTZ MD, TYRONE D, 1507 W 21ST ST N, 67203-2449  
838-2020 1803670036  
41 M 1803 74 ORS

ASHWORTH MD, ELIZABETH M, 3311 E MURDOCK, 67208-3054  
689-9300 1720830104  
57 F 1720 0 CDS

AUNINS MD, JOHN, 4853 HEMLOCK, 67216-3424  
524-6805 4706560110  
28 M 4706 58 FP

BABIKIAN MD, PAUL V, 551 N HILLSIDE STE 410, 67214-4927  
684-3838 60501830138  
57 M 60501 91 N

BACKES MD, DAVID J, 851 N HILLSIDE, 67214-4913  
685-1371 1720770110  
48 M 1720 83 U

BAJAJ MD, ASHOK K, 3243 E MURDOCK STE 500, 67208-3008  
688-7300 1902820066  
58 M 1902 89 CD

BAJAJ MD, RAVI K, 3243 E MURDOCK STE 500, 67208-3008  
688-7300 1902830134  
59 M 1902 91 CD

BALDRIDGE MD, JOHN A, 1515 S CLIFTON STE 270, 67218-0000  
681-8192 401660046  
41 M 401 92 END

BAMMEL MD, BRUCE, 3311 E MURDOCK, 67208-3054  
689-9234 2507780116  
52 M 2507 82 OBG

BARBA JR MD, ANTONIO P, 1035 N EMPORIA ST #280, 67214-2975  
264-2301 74807620341  
34 M 74807 76 OBG

BARBA MD, ESTRELLA G, 1035 N EMPORIA ST #280, 67214-2975  
264-2301 74802660212  
41 F 74802 80 CHP

BARCLAY MD, ANDREW M, 1010 N KANSAS ST, 67214-3199  
261-2607 1902730031  
49 M 80302 88 FP

BARKER MD, PATSY, 818 N EMPORIA STE 303, 67214-3727  
265-3774 64914754249  
49 F 64914 82 PD

BARTAL MD, ELY, 905 N EMPORIA BOX 3298, 67214-3715  
262-7598 39607710019  
45 M 39607 81 ORS

BARTH III MD, CHARLES W, 551 N HILLSIDE #410, 67214-4927  
684-3838 2834810061  
56 M 401 89 CD

BASS II MD, ORAL E, 851 N HILLSIDE, 67214-4913  
685-1371 2803710026  
40 M 2803 76 U

BASSELL MD, GERARD M, BOX 782438, 67278-2438  
685-4389 14303730037  
46 M 14303 82 AN

BATES MD, MICHAEL D, 2703 E CENTRAL, 67214-4610  
685-6521 3005740109  
48 M 3005 75 OBG

BATTISTE MD, CYNTHIA, 1010 N KANSAS ST, 67214-3199  
261-2622 1606730094  
0 F 0 0 PDC

BAUMAN MD, M LEON, 2828 N GOVERNEOUR, 67226-1700  
0 1902440107  
1 M 1902 44 OO

BAUMANN MD, PAUL A, 3333 E CENTRAL STE 214, 67208-3109  
688-2920 5605570048  
32 M 5605 68 R

BEAMER MD, R LARRY, 818 N EMPORIA STE 200, 67214-3788  
263-0296 1902790167  
52 M 1902 0 GS

BEATTIE MD, MARY A, 222 S RIDGE RD, 67209-2113  
945-5400 1902740658  
40 F 1902 0 PD

BEBAK MD, DONALD M, 8322 LIMERICK LN, 67208-3054  
0 3515580050  
32 M 3515 72 OO

BEBER MD, JORGE H., 8911 E ORME ST #C, 67207-2473  
689-8181 42901780077  
54 M 42901 86 P

BECK MD, CHARLES W, 1515 S CLIFTON AVE #250, 67218-2952  
687-9961 301720360  
46 M 301 80 IM

BECKER MD, KARL E, 1650 GEORGETOWN STE 200, 67218-4127  
686-7327 2307690066  
43 M 2307 78 AN

BEECH MD, RANDALL R, 9390 E CENTRAL STE 103, 67206-2555  
636-1129 1902801509  
54 M 1902 81 GS

BELTRAN MD, DELFIN J, 818 N EMPORIA STE 101, 67214-0000  
263-1574 0  
28 M 5605 92 AN

BENTON MD, GARY S, 818 N EMPORIA ST STE 200, 67214-3788  
263-0296 0  
58 M 2101 0 CDTs

BETHEL MD, CHANDLER S, 6611 E CENTRAL, 67206-1937  
682-6559 1902590079  
34 M 1902 60 IM

BHARATI MD, RALPH, 8911 E ORME STE A, 67207-2473  
686-5151 64933820473  
45 M 64933 0 P

BIERMANN MD, HENRY J, 425 E MURDOCK, 67214-3606  
264-2023 3006520072  
27 M 3006 52 GS

BIGONGIARI MD, LAWRENCE R, 929 N ST FRANCIS ST, 67214-3821  
268-5909 1611690211  
44 M 1611 0 R

BINGAMAN MD, ROBERT W, 1035 N EMPORIA STE 270, 67214-0000  
267-9000 3901721130  
47 M 3901 73 GS

BINYON MD, KERNIE W, BOX 8125, 67208-0125  
684-2819 1902560111  
24 M 1902 56 FP

BLACK MD, BRYAN L, 1650 GEORGETOWN ST STE 200, 67218-4127  
686-7327 1104850096  
57 M 1104 88 AN

BLACKMAN MD, JACQUES D, 222 S RIDGE RD, 67209-2113  
945-0142 1902760152  
51 M 1902 77 FP

BLOOM MD, BARRY T, 550 N HILLSIDE ST, 67214-4910  
851-8580 1902810885  
56 M 1902 86 PD

BLOOM MD, RODNEY L, 406 E CENTRAL ST, 67202-1058  
265-0705 1902790248  
54 M 1902 80 IM

BLOXHAM MD, THOMAS J, 3311 E MURDOCK ST, 67208-3054  
689-9215 1803750153  
50 M 1803 80 PUD

BOBER MD, JOHN F, 8911 E ORME ST STE D, 67207-2498  
686-5195 1001780081  
52 M 1001 82 P

BOLT MD, MICHAEL S, 655 N WOODLAWN ST, 67208-3648  
684-5158 1902832234  
55 M 1902 87 OPH

BOND MD, ROGER C, 3243 E MURDOCK ST STE 500, 67208-3008  
688-7300 5606670089  
40 M 5606 74 CD

BOUDREAUX MD, VELTIN J, 1325 N COVINGTON CIR, 67212-5661  
772-5000 4812640122  
37 M 4812 72 R

BOWLES MD, MARK H, 551 N HILLSIDE ST STE 410, 67214-4927  
684-3838 401750118  
48 M 401 87 CD

BOXBERGER MD, GREGORY R, 551 N HILLSIDE ST #410, 67214-4927  
684-3838 1902780242  
52 M 1902 0 CD

BOYD MD, Z REX, 120 S MAIZE RD #12, 67209-3100  
0 3005520052  
26 M 3005 56 OO

BRADA MD, DONALD ROBERT, 929 N ST FRANCIS, 67214-3821  
268-8680 1902650063  
39 M 1902 65 P

BRAKE MD, DAVID, 3243 E MURDOCK STE 104, 67208-3018  
685-2711 702680051  
43 M 702 74 R

BRAUN III MD, WILLIAM T, 3243 E MURDOCK STE 104, 67208-3018  
685-2711 2802610087  
37 M 2802 67 R

BRAUN MD, KENNETH, 212 N HILLSIDE ST, 67214-4904  
683-4688 3519720158  
47 M 3519 78 OPH

BRECKBILL MD, DAVID L, 3333 E CENTRAL #214, 67208-3109  
685-1291 1902640050  
38 M 1902 65 R

BREIT MD, SHARON K, 3233 E 2ND ST STE 504, 67208-0000  
683-6766 0  
58 F 1902 91 OBG

BREWER MD, ALAN R, PO BOX 8149, 67208-0000  
685-9633 0  
51 M 3006 0 AN

BRINTON MD, EDWARD S, 5051 W LINCOLN #8A, 67218-2467  
0 1611410260  
15 M 1611 46 OO

BROOKS MD, LYLE, 2757 S SENECA ST, 67217-2862  
522-4857 3901690099  
40 M 3901 0 FP

BROSIOUS MD, FRANK C, 547 N ARMOUR, 67206-1513  
0 1902490082  
25 M 1902 49 OO

BROSSARD MD, IRIS, 3311 E MURDOCK, 67208-3054  
689-9037 3503851325  
50 F 3503 91 N

BROWN JR MD, VAL J, 8615 FRAZIER ST, 67212-3645  
722-3625 1902790302  
53 M 1902 82 IM

BROWN MD, DAVID J, 425 E MURDOCK, 67214-3606  
265-6287 1902710139  
45 M 1902 72 GS

BROWN MD, JEFFERY C, 8404 W 13TH STE 180, 67212-2978  
722-6000 1902880191  
61 M 1902 89 IM

BROWN MD, MICHAEL P, 3333 E CENTRAL #504, 67208-3112  
683-6766 3005770270  
51 M 3007 78 OBG

BROWN MD, MICHELLE R, 551 N HILLSIDE STE 410, 67214-4927  
684-3838 1902860203  
56 F 1902 86 CD

BROWN MD, ROBERT L, 6120 E 8TH, 67218-2951  
0 1902490091  
21 M 1902 49 OO

BROWN MD, RONALD C, 818 CARRIAGE PKY, 67208-4511  
685-8231 2803730124  
47 M 2803 74 FP

BROWN MD, RONALD L, 1120 S CLIFTON, 67218-2913  
681-2108 3901710111  
45 M 3901 72 AN

BROWN SR MD, VAL J, 1802 N HYDRAULIC ST, 67214-1698  
265-1461 1003470098  
24 M 1003 49 GP

BROWNING MD, WILLIAM H, 7077 E CENTRAL #17, 67206-1942  
0 1902430161  
16 M 1902 43 OO

BRUNER MD, BRADLEY W, 3243 E MURDOCK STE 200, 67208-3005  
685-1491 1902850216  
58 M 1902 90 ORS

BRUNGARDT MD, GERARD S, 1010 N KANSAS ST, 67214-3199  
261-2650 1902830380  
57 M 1902 87 IM

BRYANT MD, R KEVIN, 901 GEORGE WASHINGTON BLVD, 67211-3901  
682-6585 512790861  
54 M 512 87 FP



BUBECK MD, RALPH W, 3311 E MURDOCK, 67208-3054  
689-9396 1803620187  
36 M 1803 68 IM

BUCK JR MD, BEN H, 1208 N CHARLOTTE, 67208-2657  
0 2834430269  
17 M 2834 44 OO

BUHR MD, BRUCE R, 1111 N ST FRANCIS, 67214-0000  
267-1924 0  
51 M 1902 92 ORS

BURNEY II MD, WILLIAM W, 1755 N MADISON ST, 67214-1994  
264-8311 1902520127  
50 M 4707 80 IM

BURNEY MD, WILLIAM W, 6608 PEPPERWOOD CT, 67226-1606  
0 4707760066  
17 M 1902 52 OO

BURPEE MD, JAMES F, 851 N HILLSIDE, 67214-4913  
685-1371 5605660128  
39 M 5605 71 U

BUTH MD, DENNIS K, 551 N HILLSIDE #410, 67214-4927  
684-3838 1902720185  
45 M 1902 73 IM

BUTIN MD, J WALKER, 936 N STRATFORD, 67206-1459  
0 1902470111  
23 M 1902 47 OO

BUTLER MD, DORIS C, 818 N CARRIAGE PKY, 67208-4511  
684-2329 1902751684  
48 F 1902 76 FP

CALIENDO JR MD, DANIEL J, 550 N HILLSIDE, 67214-4910  
688-2222 1902670064  
41 M 1902 73 EM

CALLAWAY MD, PAUL, 925 N EMPORIA, 67214-3724  
268-5996 0  
53 M 3901 92 FP

CAMPION MD, MARY K, 3311 E MURDOCK, 67208-3054  
689-9246 1902800171  
51 F 1902 83 IM

CANNON MD, MICHAEL W, 818 N EMPORIA #403, 67214-3728  
262-4467 1902751722  
50 M 1902 82 ON

CAPPER MD, STANLEY L, 3311 E MURDOCK, 67208-3054  
689-9206 1803670231  
37 M 1803 70 D

CARLILE MD, WILLIAM E, 1431 S BLUFFVIEW STE 117, 67218-3039  
685-6466 1902830428  
53 M 1902 87 AN

CARLSON MD, TERRY S, 550 N HILLSIDE, 67214-4910  
688-2826 3006770117  
50 M 3006 79 PATH

CARR MD, SUSAN L, 1010 N KANSAS, 67214-3124  
261-2647 1902860246  
59 F 1902 87 P

CARRO MD, ALBERTO F, 1520 S CLIFTON, 67218-2921  
689-5775 1902790345  
53 M 1902 85 EM

CAUBLE MD, WILBUR G, 155 S BELMONT, 67218-1301  
0 2834390119  
12 M 2834 46 OO

CAUGHLIN MD, GERALD MICHAEL, 818 N EMPORIA STE 101, 67214-3725  
263-1574 4812800308  
55 M 4812 83 AN

CHANEY MD, ERNIE J, 1131 S CLIFTON, 67218-2912  
689-5500 1902560200  
27 M 1902 56 FP

CHANG MD, FREDERIC C, 818 N EMPORIA STE 200, 67214-3788  
263-0296 2401590270  
35 M 2401 75 GS

CHAPMAN D O, THOMAS C, 3311 E MURDOCK, 67208-3054  
689-9533 2878870207  
58 M 2878 90 IM

CHARD MD, FREDERICK H, 255 S HILLSDALE DR, 67230-7114  
0 5605390082  
15 M 5605 48 OO

CHAVEZ MD, STEVE, 3333 E CENTRAL ST STE 408, 67208-3111  
682-0411 1902822051  
55 M 1902 85 PD

CHENG MD, MEI Y, 2318 E CENTRAL ST, 67214-4436  
262-2415 1902860271  
46 F 1902 87 PD

CHERVEN MD, PHILIP L, 3333 E CENTRAL ST STE 408, 67208-3111  
682-0411 2501710311  
45 M 2501 77 PD

CHI MD, IL-SUNG, BOX 782438, 67278-2438  
685-4389 58302670666  
41 M 58302 81 AN

CHO MD, SECHIN, 1010 N KANSAS ST, 67214-3124  
261-2631 58302710048  
47 M 58302 77 PD

CHONG MD, SUNG P, 3311 E MURDOCK, 67208-0000  
689-9383 0  
56 M 58309 92 IM

CHOPRA MD, RAMAN, 3333 E CENTRAL ST STE 201, 67208-3109  
685-5271 49514740037  
52 M 49536 78 PD

CHRISTMAN JR MD, CARL, 551 N HILLSIDE ST #510, 67214-0000  
685-0559 4802740404  
48 M 4802 75 OBG

CLAIBORNE MD, RICHARD A, 3243 E MURDOCK ST STE 500, 67208-3008  
688-7300 1902800227  
55 M 1902 80 IM

CLARK MD, COURTNEY, 1120 S CLIFTON AVE, 67218-2913  
681-2108 1902560242  
30 M 1902 56 AN

CLARK MD, ROBERT G, 7015 E CENTRAL ST, 67206-1940  
652-9333 1902780340  
53 M 1902 79 PS

CLIFTON MD, H DAVID, 3600 E HARRY ST, 67218-3713  
689-5050 401650199  
41 M 401 70 R

CLINE MD, BYRON W, 551 N HILLSIDE ST STE 510, 67214-4928  
685-0559 4802770354  
51 M 4802 78 OBG

COATS MD, BARBARA S, 222 S RIDGE RD, 67209-2113  
945-0142 1902830444  
57 F 1902 84 FP

COBB MD, JEANNINE M, 3311 E MURDOCK ST, 67208-3079  
689-9234 1902880271  
48 F 1902 0 OBG

COFFEY MD, CHARLES R, 1650 S GEORGETOWN ST STE 200, 67218-4127  
686-7327 1902820350  
55 M 1902 0 AN

COHEN MD, JUSTIN T, 655 N WOODLAWN, 67208-3648  
684-5158 2803740138  
47 M 2803 78 OPH

COHLMIA MD, JERRY B, 818 N EMPORIA STE 310, 67214-3727  
263-5891 1902700133  
43 M 1902 71 IM

COLEMAN MD, THOMAS J, 155 N CRESTWAY, 67208-3839  
0 3545510153  
18 M 3545 54 OO

COLLIER MD, HAROLD W, 1650 GEORGETOWN STE 200, 67218-4127  
686-7327 1902710236  
45 M 1902 72 AN

CONCEPCION JR MD, EUGENIO S, 1515 S CLIFTON STE 480, 67218-2954  
684-1048 74802640785  
39 M 74802 74 CD

CONRARDY MD, PETER A, 818 N EMPORIA #101, 67214-3725  
263-1574 515690191  
42 M 515 76 AN

COOK MD, D RAY, 315 N HILLSIDE STE A, 67214-4915  
686-3391 2012710138  
42 M 2012 72 FP

COOK MD, G EDWARD, 144 S HILLSIDE, 67211-2147  
685-9289 401670181  
42 M 401 69 R

COOPER MD, M KENT, 1650 GEORGETOWN STE 200, 67218-4127  
686-7327 1902790426  
54 M 1902 80 AN

COSSMAN MD, F PRICE, 1441 N ROCK RD #1602, 67206-0000  
0 1902570124  
28 M 1902 57 OO

COWLEY MD, CARLOS A, 551 N HILLSIDE ST STE 410, 67214-4923  
684-3838 0  
58 M 84705 0 CD

CRANE MD, DAVID D, 929 N ST FRANCIS, 67214-3821  
268-5414 2501600230  
34 M 2501 73 PATH

CRONIN MD, DONALD J, 618 RUTLAND, 67206-1526  
0 2604400247  
16 M 2604 48 OO

CROW MD, ERNEST W, 9421 BENT TREE CIR, 67226-1532  
0 1902440395  
20 M 1902 44 OO

CROWLEY MD, EDWARD X, 5 PARK AVE, 67206-2020  
0 1643400258  
14 M 1643 45 OO

CUMMINGS MD, RICHARD J, 427 N HILLSIDE, 67214-4917  
686-6608 1902570159  
32 M 1902 57 OTO

CVETKOVICH MD, LORNA L, 1035 N EMPORIA STE 290, 67214-2938  
264-6267 0  
61 F 1902 81 OBG

CZAPANSKY-BEILMAN MD, DESIREE, 550 N HILLSIDE, 67214-4910  
688-3110 1902860386  
59 F 1902 89 PD

DAKHIL MD, SHAKER R, 818 N EMPORIA STE 403, 67214-3728  
262-4467 60501750088  
50 M 60501 80 IM

DANBY MD, JOHN H, 8213 GREENBRIER, 67226-0000  
0 91705560019  
29 M 35205 83 OO

DARGER MD, KATHERINE, 1650 GEORGETOWN STE 200, 67218-4127  
686-7327 1902860416  
57 F 1902 90 AN

DARRAH MD, JOY N, 8100 E 22ND ST N BLDG 1600, 67226-2301  
681-1827 1902741930  
49 F 1902 77 R

DAVIDSON MD, RANDY G, 550 N HILLSIDE, 67214-4910  
688-2239 2846800096  
55 M 2846 81 EM

DAVIS MD, PAUL H, 7111 E 21ST, 67206-1078  
684-2851 3901720168  
47 M 3901 73 FP

DAVIS MD, RONALD B, 2535 E LINCOLN, 67211-0000  
269-2667 1902720291  
46 M 1902 73 FP

DAVISON MD, JOE D, 8200 W CENTRAL #1, 67212-3661  
721-4544 3901810370  
54 M 3901 84 FP

DAY MD, HOWARD, 818 N EMPORIA STE 310, 67214-3727  
263-5891 1902740194  
48 M 1902 76 NEP

DE BAKKER MD, JAN B, 633 N BROADMOOR AVE, 67206-1603  
0 5104590201  
25 M 5104 66 OO

DE BOISE MD, DOUGLAS, 2020 N WOODLAWN STE 550, 67208-1852  
868-1333 3006770192  
52 M 3006 89 OBG

DE HART MD, ARTHUR DONIVA, 2703 E CENTRAL, 67214-4610  
685-1277 4804771951  
50 M 4804 78 OBG

DE WITT MD, BARBARA L, 808 N EMPORIA, 67214-3793  
268-5928 1902880344  
63 F 1902 89 RO

DEGNER MD, JAMES C, 3600 E HARRY, 67218-3713  
689-5050 1902840482  
57 M 1902 0 DR

DELMORE MD, JAMES E, 3243 E MURDOCK ST STE G, 67208-3087  
681-0251 4804782431  
50 M 4804 80 GYN

DEMOSS MD, ELEANOR P, 3333 E CENTRAL ST STE 407, 67208-3111  
682-5591 74802660361  
42 F 74802 77 PD

DEPEW MD, CLIFFORD S, 345 N HILLSIDE ST, 67214-4905  
682-4572 1902860475  
60 M 1902 90 OBG

DEVOSS MD, MARK R, 1650 GEORGETOWN STE 200, 67218-0000  
686-7327 1902890331  
63 M 1902 0 AN

DILLARD MD, SANDY R, 1120 S CLIFTON, 67218-0000  
681-2108 1902870489  
61 M 1902 92 AN

DOAN MD, TRINAH, 959 N EMPORIA ST STE 2 B, 67214-3730  
267-5580 94101620195  
32 M 94101 82 GP

DOEBLIN MD, P LAURENCE, 3333 E CENTRAL ST STE 214, 67208-3109  
685-1291 1002730312  
40 M 1002 82 R

DOLAN JR MD, PHILIP JARVIS, 3311 E MURDOCK ST, 67208-3079  
689-9241 2105730317  
47 M 2105 79 GE

DOMME JR MD, SYLVESTER A, 925 N EMPORIA, 67214-3724  
268-5735 0  
48 M 1902 0 FP

DONNELL MD, JAMES M, 758 S HILLSIDE ST, 67211-3002  
687-4421 1902550298  
28 M 1902 55 FP

DOORNBOS MD, DANIEL C, 3311 E MURDOCK ST, 67208-3079  
689-9355 1902840512  
58 M 1902 0 IM

DORN MD, CURTIS C, 550 N HILLSIDE ST, 67214-4910  
651-8580 1902830576  
57 M 1902 83 PD

DORSCH MD, JOHN N, 1131 S CLIFTON AVE, 67218-2912  
689-5500 1902790515  
54 M 1902 0 FP

DOUTHIT MD, DOUGLAS D, 551 N HILLSIDE ST STE 510, 67214-4928  
685-0559 4802790487  
53 M 4802 80 OBG

DOWNING MD, GREGORY C, 551 N HILLSIDE ST STE 410, 67214-4927  
684-3838 1902790531  
52 M 1902 0 R

DRAKE MD, RALPH L, 1655 S GEORGETOWN APT 206, 67218-4122  
0 4102260177  
99 M 4102 37 OO

DRAZEK MD, GEORGE, 3311 E MURDOCK ST, 67208-3079  
689-9316 3506760339  
50 M 3506 81 OPH

DRAZEK MD, JANE K, 3600 E HARRY ST, 67218-3713  
689-4774 3506760673  
49 F 3506 81 P

DREVETS MD, CURTIS C, 3311 E MURDOCK ST, 67208-3079  
689-9178 1902560331  
30 M 1902 56 IM

DU PUIS MD, JOHN G, 222 S RIDGE RD, 67209-2165  
945-0142 0  
53 M 3843 92 PD



DUGAN MD, DAVID L, 1431 S BLUFFVIEW ST STE 117, 67218-3039  
 685-6466 1902870501  
 56 M 1902 88 AN

DUICK MD, GREGORY, 1035 N EMPORIA ST STE 210, 67218-1826  
 265-1308 1643720325  
 46 M 1643 77 CD

DURANO MD, ANTONIO C, 959 N EMPORIA ST STE 401, 67214-3723  
 263-7893 74807560160  
 29 M 74807 65 U

DYCK MD, GEORGE, 1010 N KANSAS, 67214-3199  
 261-2647 6201640154  
 37 M 6201 73 P

DYE MD, JAMES D, 1131 S CLIFTON AVE, 67218-2912  
 689-5500 2846871031  
 62 M 2846 87 FP

ECKERT MD, WILLIAM G, 7006 E 10TH ST N, 67206-1436  
 685-7612 3519520248  
 26 M 3519 67 PATH

EDWARDS MD, MANIS C, 1102 N ARMOUR ST, 67206-1332  
 0 3005580179  
 33 M 3005 65 OO

EGBERT MD, ANNE M, 1010 N KANSAS ST, 67214-3199  
 261-2622 3840791229  
 54 F 3840 80 IM

EGELHOF MD, RICHARD H, 222 S RIDGE RD, 67209-2113  
 945-0142 1902730334  
 45 M 1902 75 FP

EKENGREN MD, FRANCIE H, 550 N HILLSIDE ST, 67214-4910  
 688-2222 1902870381  
 57 F 1902 89 FP

EKENGREN MD, HUGH I, 855 N HILLSIDE ST, 67214-4982  
 685-1381 1902890439  
 63 M 1902 90 FP

ELANGO VAN MD, SUDHA, 1010 N KANSAS ST, 67214-3124  
 261-2607 1902870527  
 45 F 1902 89 FP

ELLIS MD, LAVELLE A, 3243 E MURDOCK ST STE 500, 67208-0000  
 688-7300 0  
 60 F 1902 87 IM

ELSON MD, BRUCE C, 3311 E MURDOCK, 67208-0000  
 689-9422 0  
 61 M 2501 93 R

ENOCH MD, ROLLAND K, 3236 N ROCK RD #190, 67226-1337  
 634-1200 64914762101  
 49 M 64914 78 FP

ERNST MD, TARI MAE, 818 CARRIAGE PKY, 67208-4511  
 651-2202 3005810115  
 56 F 3005 0 FP

ESTEP MD, THOMAS H, 818 N EMPORIA ST STE 200, 67214-3788  
 263-0296 6002750161  
 51 M 6002 82 CDTs

ESTIVO D O, MICHAEL P, 731 N MCLEAN BLVD #150, 67203-4935  
 721-8800 2879850765  
 57 M 2879 90 ORS

EVANS MD, ROGER W, 933 N TOPEKA ST, 67214-3620  
 263-5889 1902640238  
 39 M 1902 65 CD

EYSTER MD, ROBERT L, 3243 E MURDOCK ST STE 200, 67208-3005  
 685-1491 3901730414  
 47 M 3901 74 ORS

FAHRENHOLTZ MD, RANDALL K, 3600 E HARRY ST, 67218-3784  
 689-4850 1902751960  
 50 M 1902 76 FP

FARHA MD, AYHAM J, 851 N HILLSIDE ST, 67214-4913  
 685-1371 60501840061  
 59 M 60501 0 U

FARHA MD, GEORGE J, 818 N EMPORIA ST STE 200, 67214-3726  
 263-0296 2101570358  
 27 M 2101 64 GS

FARHA MD, S JIM, 818 N EMPORIA ST STE 200, 67214-3788  
 263-0296 1001570419  
 31 M 1001 65 CDTs

FARHAT MD, ASSEM Z, 3243 E MURDOCK ST STE 500, 67208-3008  
 688-7300 87501830061  
 60 M 87501 90 CD

FARLEY MD, JAMES A, 3600 E HARRY ST, 67218-3713  
 689-5671 1902782229  
 50 M 1902 82 PATH

FEAREY MD, ALAN J, 3311 E MURDOCK ST, 67208-3079  
 689-9410 1902780609  
 53 M 1902 80 IM

FELT MD, SAMUEL E, 550 N HILLSIDE ST, 67214-4910  
 688-2825 1902720452  
 46 M 1902 75 PATH

FERNANDEZ MD, HECTOR O, 1515 S CLIFTON AVE STE 460, 67218-2954  
 683-2299 74809660129  
 41 M 74809 76 GS

FERRIS MD, BRUCE G, 825 N HILLSIDE ST, 67214-4913  
 688-7500 1902690324  
 43 M 1902 70 PS

FEUILLE JR MD, EDMOND G, 551 N HILLSIDE ST STE 510, 67214-4928  
 685-0559 4802750531  
 50 M 4802 76 OBG

FIELDS D O, STEPHEN, 7200 W 13TH ST N, 67212-2968  
 721-1200 2878720086  
 42 M 2878 73 FP

FISHER MD, RAY F, 3243 E MURDOCK ST STE 500, 67208-3008  
 688-7300 1902742227  
 49 M 1902 77 IM

FITZGERALD MD, EDWARD J, 3600 E HARRY ST, 67218-3713  
 689-5050 3006500152  
 22 M 3006 50 R

FITZIG MD, SANFORD, 3311 E MURDOCK ST, 67208-3079  
 689-9185 4102720640  
 46 M 4102 79 U

FLOWERS JR MD, CLELL B, 855 N HILLSIDE ST, 67214-4913  
 685-1381 1902550395  
 22 M 1902 55 FP

FORD MD, CHARLES R, 232 S MAIZE RD, 67209-3110  
 722-0568 1902630241  
 38 M 1902 64 OPH

FORRED MD, WALTER, 551 N HILLSIDE ST STE 410, 67214-4927  
 684-3838 1902691223  
 43 M 1902 70 GER

FOWLER MD, ROBERT J, 3311 E MURDOCK ST, 67208-3079  
 689-9236 2802630169  
 37 M 2802 70 IM

FRANCISCO MD, DAN A, 551 N HILLSIDE ST STE 410, 67214-4927  
 684-3838 1803751508  
 40 M 1803 81 CD

FRANCISCO MD, LINDA L, 818 N EMPORIA ST STE 310, 67214-3727  
 263-5891 1803741448  
 47 F 1803 82 NEP

FRENCH MD, JAMES E, 1515 S CLIFTON AVE STE 420, 67218-2954  
 684-5237 3005780437  
 53 M 3005 80 GS

FRENCH MD, JEROME E, 310 S HILLSIDE ST, 67211-2129  
 684-2838 1103710223  
 44 M 1103 82 OTO

FRITZE MD, MARK H, 3600 E HARRY ST, 67218-3713  
 689-5050 3901840571  
 58 M 3901 90 DR

FRITZEMEIER MD, WILLIAM H, 7373 E 29TH ST N II E311, 67226-3405  
 0 1902410178  
 14 M 1902 41 OO

FROMER MD, JOEL, 2627 E CENTRAL, 67214-4608  
 684-0501 16506750095  
 46 M 16501 81 A

FROMM MD, ARTHUR H, 315 N HILLSIDE STE C, 67214-4915  
685-2281 1902630267  
37 M 1902 64 FP

FULTON MD, JOHN K, 236 S TERRACE DR, 67218-1432  
0 5605430360  
18 M 5605 50 OO

GAGNON MD, SUZANNE, 1010 N KANSAS, 67214-3124  
261-2650 2405850420  
56 F 2405 0 IM

GALICIA MD, JOSEPH P, 551 N HILLSIDE #410, 67214-4927  
684-3838 1902690413  
42 M 1902 70 CD

GALVAN MD, ALONSO, 3243 E MURDOCK STE 500, 67208-3008  
688-7300 64906640013  
38 M 64906 72 IM

GARDNER MD, JARED J, 550 N HILLSIDE, 67214-4910  
688-7700 801710964  
44 M 801 89 PATH

GAUGHAN EXEC DIR, CAROLYN N, 1999 N AMIDON STE 300, 67203-2124  
652-7244 0  
0 F 0 0

GEISLER MD, STEVEN R, 1040 RUTLAND, 67206-3823  
634-2696 0  
59 M 1803 90 AN

GENILO MD, CELESTE A, 3311 E MURDOCK, 67208-3054  
689-9445 74801623470  
39 F 74801 62 AN

GEORGE MD, EARL F, 2146 N OLD MANOR, 67208-2549  
681-3320 1902650268  
35 M 1902 66 FP

GIBBONS D O, DEBBIE R, 2335 N CEDAR DOWNS LN, 67223-7038  
945-0124 4878860271  
55 F 4878 91 FP

GILMARTIN MD, RICHARD C, 2620 E CENTRAL, 67214-4609  
686-6866 4112580269  
32 M 4112 77 PDN

GLUCK MD, JAMES L, 1507 W 21ST ST, 67203-2449  
838-2020 3844850271  
61 M 3844 91 ORS

GOERING MD, RANDALL V, 1969 W 21ST, 67203-2106  
832-9024 1902840644  
58 M 1902 85 FP

GOLDBERG MD, HERBERT R, 1515 S CLIFTON AVE #440, 67218-2954  
682-9130 3508590309  
33 M 3508 64 PD

GONZALEZ MD, HIRAM, 1431 S BLUFFVIEW DR #203, 67218-3039  
681-1384 64901520575  
20 M 64901 71 P

GOOD D O, FREDERICK C, 550 N HILLSIDE, 67214-4910  
688-2222 2878780208  
51 M 2878 79 EM

GOODPASTURE MD, HEWITT C, 818 N EMPORIA STE 305, 67214-3727  
264-3505 1902690448  
43 M 1902 70 IM

GORDON MD, JAMES R, 3311 E MURDOCK, 67208-3054  
689-9260 1611781071  
53 M 1611 83 IM

GOTTLIEB D O, SHERYL L, 550 N HILLSIDE, 67208-4976  
688-2239 0  
57 F 3575 92 EM

GOYLE MD, KRISHAN K, 1150 N SAINT FRANCIS ST, 67214-2883  
267-9906 49529640055  
34 M 49529 76 CD

GOYLE MD, VIMAL, 1150 N SAINT FRANCIS ST, 67214-2883  
267-9906 49529670108  
41 F 49529 76 OBG

GRABAU MD, GUY M, 1035 N EMPORIA STE 265, 67214-2939  
269-4026 1902860661  
54 M 1902 87 PUD

GRAINGER MD, DAVID A, 2903 E CENTRAL, 67214-4716  
687-2112 1902810311  
55 M 1902 0 END

GRANT MD, MICHAEL E, 818 N EMPORIA STE 310, 67214-3727  
263-5891 1902850658  
59 M 1902 86 NEP

GRAUEL MD, CHARLES W, 14821 SHARON LN, 67230-7061  
685-6091 1902700451  
44 M 1902 71 AN

GRAVES MD, JACK W, 610 RUTLAND, 67206-1526  
0 1902420246  
17 M 1902 42 OO

GRAY MD, C LUCIEN, 3311 E MURDOCK, 67208-3054  
689-9227 1902450293  
21 M 1902 45 ENT

GRAY MD, H TOM, 1655 S GEORGETOWN ST #226, 67218-4123  
0 401440313  
19 M 401 55 OO

GREENWOOD MD, MELANIE A, 10202 W 13TH ST N, 67212-4377  
729-9100 1902880620  
49 F 1902 89 FP

GREER MD, JAMES A, 3311 E MURDOCK ST, 67208-3079  
689-9227 1611690688  
43 M 1611 78 OTO

GRELINGER MD, BART A, 3243 E MURDOCK ST STE 500, 67208-3008  
688-7300 1902870683  
61 M 1902 92 N

GRENE MD, ROBERT BRUCE, 8020 E CENTRAL AVE #200, 67206-2360  
636-2010 1902780706  
53 M 1902 0 OPH

GRIEBEL MD, DONNA J, 3243 E MURDOCK ST #300, 67208-3006  
681-0736 1902850674  
58 F 1902 89 ON

GRINDEL DO, STEPHEN J, 7150 E HARRY ST, 67207-2991  
687-2651 2878860406  
56 M 2878 87 FP

GROSS MD, BRIAN M, 1035 N EMPORIA ST #265, 67214-2939  
269-4026 2803820336  
56 M 2803 0 PUD

GRUSHNYS MD, ARNOLD, 14419 TIPPERARY CIR, 67230-9565  
0 40721590111  
19 M 40721 70 OO

GSELL MD, GEORGE F, 7373 E 29TH ST N #W104, 67226-3405  
0 1601340492  
7 M 1601 34 OO

GUTHRIE MD, RICHARD A, 200 S HILLSIDE ST, 67211-2127  
687-3100 2803600204  
35 M 2803 73 PD

HABASHY MD, SHAWKY N F, 2121 N TYLER RD #210, 67212-4900  
722-6109 33004650056  
43 M 33004 80 OBG

HAGAN MD, C THOMAS, 1010 N KANSAS ST, 67214-3199  
261-2622 3006420205  
16 M 3006 42 IM

HAGAN MD, FRANCIS J, 14817 E 29TH N, 67228-9632  
0 3006390314  
13 M 3006 39 OO

HAGAN MD, ROBERT C, 3311 E MURDOCK ST, 67208-3079  
689-9306 1302770573  
52 M 1902 82 GE

HAGAN MD, STEPHEN F, 1250 W MAPLE, 67213-3916  
262-1057 2834800503  
53 M 2802 81 PUD

HALL MD, J ROGER, 1148 S HILLSIDE ST #107, 67211-4005  
685-5227 4802680517  
42 M 4802 76 OPH

HARRINGTON MD, ELAINE M, 3236 N ROCK RD #190, 67226-2654  
634-1200 1902890641  
57 F 1902 90 PD



HARRIS MD, FRANK H, 2026 N OLD MANOR, 67208-2508

0 1001390208  
9 M 1001 39 OO

HARRISON MD, PAUL B, 3243 E MURDOCK STE 404, 67208-3007

685-6222 1902742154  
49 M 1902 78 GS

HART MD, DILLIS L, 1515 S CLIFTON STE 300, 67218-2953

688-0135 3901640369  
36 M 3901 67 GS

HART MD, JOHN J, 3340 E CENTRAL, 67208-3104

688-3070 2803800424  
53 M 2803 78 GP

HARTLEY MD, FOUNT K, 3007 E CENTRAL, 67214-4814

686-7369 1902530343  
25 M 1902 53 GS

HARTLEY MD, JAMES M, 818 CARRIAGE PKY, 67208-4511

685-8231 2604710581  
45 M 2604 79 FP

HARTMAN MD, KECK R, 818 N EMPORIA STE 305, 67214-3727

264-3505 1902820708  
55 M 1902 0 ID

HARTWELL MD, KIMBERLY, 855 N HILLSIDE, 67214-4913

685-1381 1902821828  
56 F 1902 83 FP

HARTWELL MD, RICK L, 855 N HILLSIDE, 67214-4913

685-1381 1902820716  
83 M 1902 83 FP

HARVEY MD, ROSEMARY B, 2230 CARDINAL DR, 67204-5311

0 1902490287  
24 F 1902 49 OO

HASKINS MD, ROBERT J, 1010 N KANSAS, 67214-3124

261-2607 1902740445  
46 M 1902 75 FP

HASSAN MD, RIZWAN U, 818 N EMPORIA STE 411, 67214-3728

268-6856 70404710131  
47 M 70404 70 N

HASTINGS MD, GLEN E, 1431 BLUFFVIEW ST #109, 67214-3091

685-3030 1902620342  
32 M 1902 67 IM

HATTRUP MD, RICHARD J, 2959 N WEBB RD, 67226-8115

682-9477 3006570282  
31 M 3006 59 FP

HAVEY MD, DAVID, 2645 N RUSHWOOD CT, 67226-0000

0 1945800318  
50 M 1645 0 AN

HAWLEY MD, RAYMOND G, 929 N ST FRANCIS, 67214-3821

268-5559 1902650357  
39 M 1902 66 PATH

HAY MD, JAMES R, 1120 S CLIFTON, 67218-2913

681-2108 1902860777  
58 M 1902 88 AN

HAYES MD, WILLIAM L, 1209 GRETCHEN LN, 67206-1444

0 1902530351  
28 M 1902 53 OO

HAYNES MD, DEBORAH G, 8100 E 22ND ST N #2200, 67226-2301

683-4334 1902790833  
54 F 1902 80 FP

HAYS MD, THOMAS H, 7111 E 21ST, 67206-1078

684-2851 1902750505  
49 M 1902 76 FP

HEALY MD, PATRICK M, 818 N EMPORIA STE 101, 67214-3725

263-1574 3006820408  
56 M 3006 86 AN

HELENA MD, WESLEY D, PO BOX 782438, 67278-2438

685-4389 1902880719  
58 M 1902 89 AN

HELLMAN MD, DAVID W, 1520 S CLIFTON, 67218-2921

689-5775 1902870721  
59 M 1902 88 EM

HELTON MD, REBECCA A, 3243 E MURDOCK STE 300, 67208-0000

681-0736 0  
53 F 1902 92 HEM

HENWOOD MD, JOHN R, 7602 E HARRY, 67207-3128

682-7411 3901820707  
52 M 3901 85 FP

HERBOLD MD, DAVID R., 550 N HILLSIDE, 67214-4910

688-2814 2802761433  
42 M 2802 88 PATH

HERED MD, JOHN, 1515 S CLIFTON #370, 67218-2953

686-7222 2802670292  
41 M 2802 73 N

HERSHORN MD, SIMON E, 9117 LAKEPOINT, 67226-2104

0 1902460205  
22 M 1902 46 OO

HESSE MD, JAMES F, 9350 E CENTRAL, 67206-2555

636-2662 1902820775  
54 M 1902 0 FP

HETT MD, EDWARD J, 1969 W 21ST, 67203-2106

832-9024 1902810401  
55 M 1902 82 FP

HILL MD, LARY M, 1131 S CLIFTON AVE, 67218-2912

689-5500 1902770646  
51 M 1902 78 FP

HINSHAW JR MD, CHARLES T, 1833 N ROCK RD CT, 67206-1251

685-4622 1902580413  
32 M 1902 59 PATH

HINSHAW MD, ALFRED H, 1655 GEORGETOWN #307, 67218-4124

0 1902330221  
7 M 1902 33 OO

HIZON MD, RAMON R, 929 N ST FRANCIS, 67214-3821

268-5906 74801622503  
38 M 74801 62 DR

HO MD, TEH I, 929 N ST FRANCIS, 67214-3821

268-5615 24402750274  
50 M 24402 91 PATH

HODSON MD, HERVEY R, 8809 E HARRY APT 909, 67207-4723

0 1606310516  
3 M 1606 31 OO

HOLDEN JR MD, RAYMOND F, 262 S BROOKSIDE, 67218-1705

0 2802330394  
10 M 2802 56 OO

HOLLOWAY MD, KELLY D, 818 N EMPORIA STE 101, 67214-3725

263-1574 1902860874  
57 M 1902 0 AN

HOLLOWAY MD, KEVIN B, 1100 N SAINT FRANCIS ST #400, 67214-2878

264-3222 1902840831  
57 M 1902 85 P

HOLMES MD, JED, 7111 E 21ST, 67206-1078

684-2851 3005780593  
53 M 3005 79 FP

HOLT MD, JOHN M, 1010 N KANSAS ST, 67214-3199

261-2650 1902610380  
35 M 1902 62 IM

HOPPOCK MD, KEVIN C, 7717 E 29TH ST N, 67226-0000

636-5585 1902890757  
64 M 1902 90 FP

HORBELT MD, DOUGLAS V, 3243 E MURDOCK L-G, 67208-0000

681-0251 4802721744  
47 M 4802 73 OBG

HOUN MD, DAVID H, 929 N ST FRANCIS ST, 67214-3821

268-5717 0  
52 M 24405 90 PATH

HOUSHOLDER MD, DANIEL F, 929 N ST FRANCIS, 67214-3821

268-5922 1902700559  
43 M 1902 71 NM

HOUSHOLDER MD, MARTHA S, 835 N HILLSIDE, 67214-4913

685-4395 1902720991  
46 F 1902 73 D

HOWARD MD, DONALD O, 82 VIA VERDE, 67230-1604  
0 1902380236  
11 M 1902 38 OO

HOWELL MD, STEVEN J, 1507 W 21ST ST N, 67203-2449  
838-2020 0  
60 M 1902 92 ORS

HUGHES D O, STEVEN R, 1520 S CLIFTON, 67218-2921  
689-5775 2878820048  
49 M 2878 83 FP

HUGHES MD, JOHN D, 818 N EMPORIA STE 200, 67214-3788  
263-0296 1902800529  
51 M 1902 81 GS

HUMMER MD, LLOYD M, 3311 E MURDOCK, 67208-3054  
689-9323 3901570298  
32 M 3901 66 IM

HUND MD, LARRY R, 3333 E CENTRAL STE 408, 67208-3111  
682-0411 1902780838  
52 M 1902 81 PD

HUNNINGHAKE MD, RONALD, 3100 N HILLSIDE, 67219-3904  
682-3100 1902760616  
51 M 1902 82 FP

HUNTER MD, KARLA J, PO BOX 8149, 67208-0149  
685-9633 0  
59 F 3901 0 AN

HUSTEAD MD, ROBERT F, 2401 N PERSHING, 67220-2908  
681-0451 801540309  
28 M 801 63 AN

HUTCHINSON MD, STEVEN A, 551 N HILLSIDE #550, 67214-4989  
682-2911 1902840920  
59 M 1902 0 GPVS

HUYCKE MD, EDWARD J, 5500 E KELLOGG, 67218-1607  
651-3603 1902530424  
28 M 1902 53 IM

HYDER MD, JACE W, 1431 S BLUFFVIEW STE 210, 67218-3039  
687-1090 1902790990  
52 M 1902 0 CRS

HYMAN MD, ANN B, 929 N ST FRANCIS, 67214-3821  
268-5050 0  
60 F 1902 90 EM

HYNES MD, HENRY E, 818 N EMPORIA STE 403, 67214-3728  
262-4467 53902580120  
35 M 53902 65 HEM

IBARRA MD, J LUIS, 8201 E HARRY #601, 67207-4647  
0 64901460084  
20 M 64901 59 OO

IDBEIS MD, BADR, 818 N EMPORIA #200, 67214-3788  
263-0296 87501720591  
47 M 87501 80 CDTs

INDECK MD, MARGARET N, 1650 GEORGETOWN DR STE 200, 67218-4127  
686-7327 0  
58 F 702 0 AN

JACKSON MD, CHARLES R, 5201 E 53RD NORTH, 67220-3521  
0 1606530486  
27 M 1606 60 OO

JACOB MD, KANNAMPALLY L, 1515 S CLIFTON STE 320, 67218-2954  
689-8899 49537590075  
31 M 49537 76 U

JADHAV MD, KISHOR B, 1625 S LONGFORD #301, 67207-5187  
263-1574 49517710040  
48 M 49517 76 AN

JAMES MD, DONALD L, 1301 N WEST, 67203-1347  
945-5245 3901710553  
42 M 3901 81 OTO

JAMES MD, PHILIP C, 3311 E MURDOCK, 67208-3054  
689-9442 1902840954  
51 M 1902 86 PD

JANSSON MD, KENNETH A, 905 N EMPORIA, 67214-3715  
262-7598 3201820323  
58 M 3201 91 ORS

JECHA MD, LARRY D, 1900 E 9TH ST, 67214-3198  
268-8391 0  
40 M 1902 66 PM

JEHAN MD, SAYED S, 635 N MAIN, 67203-3602  
383-8036 70403590141  
33 M 70403 75 P

JENNEY MD, CHARLES B, 818 N EMPORIA STE 200, 67214-3788  
263-0296 2834610364  
34 M 2834 68 GS

JENSEN JR MD, JOHN T, 1650 GEORGETOWN STE 200, 67218-0000  
686-7327 1902892041  
58 M 1902 0 AN

JENSEN MD, DARAN L, 551 N HILLSIDE STE 540, 67214-4928  
685-7234 3005790645  
52 M 3005 80 OBG

JESTER MD, SHELBY L, 1650 GEORGETOWN #200, 67218-4127  
268-6189 4107740274  
43 F 4102 78 AN

JOHNSON MD, CAROL A, 3340 E CENTRAL, 67208-3104  
688-3070 1902770727  
49 F 1902 78 FP

JOHNSON MD, CAROLYN K, 550 N HILLSIDE, 67214-4910  
688-2360 1902800570  
48 F 1902 81 NPM

JOHNSON MD, DAVID B, 818 N EMPORIA ST STE 403, 67214-3728  
262-4467 702800561  
54 M 702 0 HEM

JOHNSON MD, GEORGE K, 1010 N KANSAS ST, 67214-3199  
261-2650 1205670277  
40 M 1205 79 IM

JOHNSON MD, MATTHEW S, 7150 E HARRY ST, 67207-2991  
687-2561 1902850887  
59 M 1902 87 FP

JOHNSON MD, TERESA K, 818 CARRIAGE PKY, 67208-4511  
651-2210 1902850895  
58 F 1902 86 FP

JOHNSON MD, THOMAS E, 3333 E CENTRAL ST STE 214, 67208-3109  
685-1291 1643670387  
41 M 1643 75 R

JOHNSTON MD, SARAH C, 5500 E KELLOGG DR, 67218-1607  
685-2221 1902760314  
51 F 1902 0 IM

JONES MD, JAY S, 1507 W 21ST ST N, 67203-2449  
838-2020 64914770864  
50 M 64914 0 ORS

JONES MD, JON K, 550 N HILLSIDE ST, 67214-4910  
688-2239 1902830983  
55 M 1902 88 IM

JONES MD, RODNEY L, 1040 RUTLAND ST, 67206-3823  
634-2696 1803820798  
56 M 1803 84 AN

JOSEPH JR MD, JAMES, 3243 E MURDOCK ST STE 200, 67208-3005  
685-1491 702840571  
56 M 702 0 ORS

JOSLIN MD, CHARLIE G, 855 N HILLSIDE ST, 67214-4913  
685-1381 1902880841  
56 M 1902 89 FP

JOST MD, GARY D, 1035 N EMPORIA ST #270, 67214-2939  
264-5700 1902770778  
51 M 1902 78 GS

JUDILLA JR MD, FRANCISCO, 818 N EMPORIA ST STE 101, 67214-3725  
263-1574 74811710451  
44 M 74801 76 AN

KADER MD, GIHAN S, 3311 E MURDOCK ST, 67208-3079  
689-9137 60501740066  
49 F 60501 0 N

KADISON MD, HERBERT I, 929 N SAINT FRANCIS ST, 67214-3821  
268-5916 1611690921  
44 M 1611 75 R



KAHN MD, DAVID M, 3311 E MURDOCK ST, 67208-3079

689-9316 3843790517  
54 M 3843 85 OPH

KARDATZKE MD, JON K, 8200 W CENTRAL ST STE 1, 67212-3661

721-4544 1720620673  
36 M 1720 65 FP

KASHA MD, ROBERT L, 8454 E MOUNT VERNON ST, 67207-5247

0 2834380504  
11 M 2834 46 OO

KASSEBAUM MD, KENNETH G, 8901 E ORME ST, 67207-2473

686-5108 1606600557  
34 M 1606 75 CHP

KATER MD, ERIC D, 3600 E HARRY ST, 67218-3713

689-5050 1902820899  
56 M 1902 87 DR

KAUFMAN MD, EUGENE E, 3243 E MURDOCK ST STE 200, 67208-3005

685-1491 1902560617  
30 M 1902 56 ORS

KEITH MD, REX B., 925 N. EMPORIA ST, 67214-3724

265-2876 1902850909  
59 M 1902 0 FP

KELLER MD, JAMES P, 1515 S CLIFTON AVE STE 250, 67218-2952

685-1284 1902740631  
48 M 1902 75 IM

KENAGY MD, ROBERT S, 7717 E 29TH N, 67226-3403

636-5585 1902870900  
57 M 1902 0 FP

KENDALL MD, TOM E, 323 HAMPTON RD, 67206-1904

0 3901620422  
37 M 3901 70 OO

KENDRICK MD, J GILLERAN, 550 N HILLSIDE ST, 67214-4910

688-2088 1902460311  
20 M 1902 47 ADM

KENNEDY MD, GERALD T, 551 N HILLSIDE ST STE 410, 67214-4927

684-3838 1902610444  
35 M 1902 62 GE

KERSCHEN MD, VALARIE L, 1010 N KANSAS ST, 67214-3124

261-2631 1902860980  
59 F 1902 0 PD

KETTERMAN MD, DIANA K, 2757 S SENECA ST, 67217-2862

264-5182 1902852111  
58 F 1902 87 FP

KEYES MD, MICHAEL J, 2939 N ROCK RD STE 100, 67226-1100

636-4344 2101700669  
44 M 2101 84 P

KHICHA MD, GYANCHAND J, 818 N EMPORIA STE 200, 67214-3788

263-0296 49530610071  
37 M 49530 73 CDTs

KHOURY MD, GEORGE H, 3333 E CENTRAL STE 416, 67208-3111

681-2021 33002550101  
32 M 33002 75 PD

KILGORE III MD, WILLIAM R, 3311 E MURDOCK, 67208-3054

689-9111 3901840881  
58 M 3901 90 GE

KIM MD, PAIK N, 3243 E MURDOCK STE 300, 67208-3006

681-0736 58302580403  
33 M 58302 75 HEM

KINDEL MD, VICTORIA W, 551 N HILLSIDE #540, 67214-4928

685-7234 1902861978  
59 F 1902 87 OBG

KIPPERMAN MD, ROBERT M, 551 N HILLSIDE STE 410, 67214-4927

684-3838 30501810084  
53 M 30501 0 CD

KIRK JR MD, E DAVID, 1431 S BLUFFVIEW DR STE 209, 67218-3039

685-1351 1902620440  
34 M 1902 63 IM

KIRSCH MD, MARK A, 1650 GEORGETOWN STE 200, 67218-4127

686-7327 1902820953  
53 M 1902 85 AN

KISER MD, JOHN L, 3243 E MURDOCK STE 404, 67208-3007

685-6222 2802620465  
37 M 2802 65 GS

KISER MD, WILLARD J, 1446 WILLOW RD, 67208-2421

0 4705300211  
5 M 4705 34 OO

KLAFTA MD, LEONARD A, 3311 E MURDOCK, 67208-3054

689-9423 1611620817  
37 M 1611 87 NS

KLAUMANN MD, MICHELLE, 905 N EMPORIA, 67214-0000

262-7598 0  
59 F 1902 88 ORS

KLEIN MD, TERRY D, 7602 E HARRY, 67207-3128

682-7411 1902850941  
55 M 1902 0 FP

KLEIN MD, THOMAS C, 7602 E HARRY, 67207-3128

682-7411 1902880930  
60 M 1902 91 FP

KLINGMAN MD, DIANE D, 8100 E 22ND ST N #2200, 67226-2301

683-4334 1902790493  
53 F 1902 80 FP

KLONIS D O, DEMOSTHENIS, 551 N HILLSIDE #410, 67214-4927

684-3838 4878830321  
55 M 4878 0 CD

KLUZAK MD, THOMAS R, 550 N HILLSIDE, 67214-4910

688-2836 1643741870  
49 M 1643 88 PATH

KNAPP MD, M ROBERT, 37 VIA ROMA, 67230-1602

0 3519470615  
23 M 3519 55 OO

KNEIDEL MD, THOMAS W, 1111 N SAINT FRANCIS ST, 67214-2800

267-1924 4101660562  
40 M 4101 70 ORS

KNIGHT MD, LAURA C, 929 N ST FRANCIS, 67214-3821

268-5912 502680188  
42 F 502 0 DR

KNIGHT MD, PHILIP J, 818 N EMPORIA STE 200, 67214-3788

263-0296 502680650  
42 M 502 82 PDS

KOEHLER D O, TIMOTHY M, 222 S RIDGE RD, 67209-0000

945-0142 3979900090  
59 M 3979 92 FP

KOEHN MD, NORMAN S, 3311 E MURDOCK, 67208-3054

689-9242 3901851815  
49 M 3901 0 IM

KOURI MD, SAMMY H, 551 N HILLSIDE STE 550, 67214-4989

682-2911 3901570387  
33 M 3901 62 GS

KRAUSE MD, ROLAND L, 230 S RUTAN, 67218-1138

0 1902530505  
25 M 1902 53 OO

KREADY MD, JOHN L, 818 CARRIAGE PKY, 67208-4511

685-8231 1902791091  
48 M 1902 80 FP

KUBINA MD, GLENN RICHARD, 310 S HILLSIDE, 67211-2129

684-2838 3840730831  
47 M 3840 79 OTO

KUMAR MD, ARUN, 3333 E CENTRAL #816, 67208-3115

685-5326 49529740106  
50 M 49529 85 PD

KURTH MD, C JOSEPH, 27 NORFOLK DR E, 67206-2016

0 3006350312  
10 M 3006 37 OO

LAI MD, CHUEN-HUEY, 929 N ST FRANCIS, 67214-3821

268-5428 24405780051  
53 F 24405 88 PATH

LANCE JR MD, JOHN F, PO BOX 8206, 67208-8206

0 1902450382  
20 M 1902 45 OO

LAPORTE MD, LEON R, 1515 S CLIFTON AVE STE 200, 67218-2952  
686-2800 6201650214  
42 M 6201 91 N

LATIMER MD, KATHERINE, 1650 GEEORGETOWN ST STE 200, 67218-4127  
686-7327 401750576  
49 F 1205 78 AN

LAUDERT MD, SUSAN E, 550 N HILLSIDE, 67214-0000  
651-8580 1902870985  
51 F 1902 92 NEM

LAUER MD, DAVID K, 8200 W CENTRAL ST STE 1, 67212-3661  
721-4544 1902880972  
60 M 1902 90 FP

LAWN MD, CLAUDIA A, 144 S HILLSIDE ST, 67211-2192  
685-3411 1902751536  
50 F 1902 77 R

LAWN MD, RAYMOND A, 715 N MISSION RD, 67206-1547  
683-8991 2604360431  
9 M 2604 49 AM

LAWTON MD, STEVEN K, 3311 E MURDOCK ST, 67208-3079  
689-9309 1902870993  
61 M 3005 92 U

LEAR MD, REX V, 8911 E ORME ST STE D, 67207-2498  
686-5195 1902861048  
60 M 1902 87 P

LEE JR MD, EDWARD S, 2002 E 17TH ST N, 67214-1849  
0 4707370195  
9 M 4707 52 OO

LEE MD, MARTIN W, 3243 E MURDOCK ST STE 300, 67208-3089  
681-0736 4814820870  
56 M 4814 86 ON

LEE MD, R REX, 6155 E HARRY ST, 67218-3895  
682-1754 3901550637  
29 M 3901 55 FP

LEISY MD, JERALD W, 3310 E DOUGLAS AVE STE 101, 67208-3394  
681-2937 1902680582  
42 M 1902 70 P

LEITNER MD, YORAM B, 3311 E MURDOCK ST, 67208-3079  
689-9227 3519770821  
53 M 3519 82 OTO

LESKO MD, PAUL D, PO BOX 407, 67201-0407  
264-9225 5605790820  
49 M 5605 0 ORS

LEU MD, RICHARD H, 925 N EMPORIA ST, 67214-3724  
268-5996 1803740697  
48 M 1803 89 FP

LEVINE MD, WILLIAM R, 8911 E ORME ST, 67207-2498  
686-5151 1902670561  
42 M 1902 68 P

LIES MD, RICHARD B, 3311 E MURDOCK ST, 67208-3079  
689-9131 1902680604  
42 M 1902 69 RHU

LIN MD, JOE J, 929 N ST FRANCIS ST, 67214-3821  
268-5420 24404690112  
42 M 24404 72 PATH

LINDHOLM MD, DWIGHT L, 3333 E CENTRAL ST STE 602, 67208-3113  
651-0033 1902781044  
53 M 1902 89 PDN

LIPMAN MD, RANDEE E, 3311 E MURDOCK ST, 67208-3079  
689-9370 64935831189  
56 F 64935 91 CD

LITTELL MD, JAMES A, 929 N ST FRANCIS ST RMC, 67214-3821  
268-5048 1902711305  
44 M 1902 72 EM

LIVINGSTON D.O., DOUGLAS R, 551 N HILLSIDE ST STE 410, 67214-4927  
684-3838 2879770486  
52 M 2879 78 PUD

LOEFFLER MD, JAMES A, 400 N WOODLAWN ST STE 109, 67208-4331  
685-5375 3841630458  
36 M 3841 68 A

LOEWEN MD, WILLIAM C, 8200 W CENTRAL ST STE 1, 67212-3661  
721-4544 1902711275  
41 M 1902 72 FP

LOHNES JR MD, JOHN H, 3333 E CENTRAL ST STE 214, 67208-3109  
685-1291 1803820984  
55 M 1803 0 DR

LOKER MD, JAMES L, 3311 E MURDOCK ST, 67208-3079  
689-9264 1902861099  
56 M 1902 0 PDC

LOSEE MD, JOHN M, 1650 GEORGETOWN ST STE 200, 67218-4127  
686-7327 4301770711  
51 M 4301 82 AN

LOUIS D O, MICHELLE, 7717 E 29TH ST N, 67226-3403  
636-5585 2878880202  
59 F 2878 91 FP

LOVETT MD, PAUL A, 110 PATTON, 67208-4437  
0 1902450391  
9 M 1902 45 OO

LOW MD, HAROLD L, 2481 COOLIDGE, 67204-5615  
0 1902440891  
18 M 1902 44 OO

LOWER MD, TERI A, 3311 E MURDOCK, 67208-0000  
689-9269 1902870349  
60 F 1902 88 A

LUCAS MD, GEORGE L, 3311 E MURDOCK, 67208-3054  
689-9495 1001610542  
34 M 1001 84 ORS

LUDLOW MD, MICHAEL G, 8200 W CENTRAL STE 1, 67212-3661  
721-4544 1902821054  
56 M 1902 85 FP

LUEKEN MD, LUEKE B, 3311 E MURDOCK, 67208-3054  
689-9234 40723520110  
23 M 40723 63 OBG

LUTZ MD, RICHARD E, 550 N HILLSIDE, 67214-4910  
688-2362 1902841179  
55 M 1902 88 PD

LYGRISSE MD, DANIEL V, 3311 E MURDOCK, 67208-3054  
689-9107 64914782838  
50 M 64914 82 FP

LYNCH MD, MARY A, PO BOX 21316, 67208-7316  
263-2163 1002772147  
48 F 1002 81 FP

MAGIDSON MD, ELLIOTT A, 116 LONGFORD CT, 67206-2424  
689-9275 1611681166  
43 M 1611 21 PATH

MAILMAN MD, GERSHOM, 4527 E NORWOOD CT, 67220-2313  
0 3519530791  
26 M 3519 57 OO

MANASCO MD, RONALD R, 1650 GEORGETOWN #200, 67218-4127  
686-7327 512830846  
52 M 512 0 AN

MANDELBAUM MD, MARK A, PO BOX 47668, 67201-7668  
684-3838 3901791057  
53 M 3901 83 N

MANNING MD, ROBERT T, 1010 N KANSAS ST, 67214-3199  
261-2650 1902540586  
27 M 1902 54 IM

MARBACH MD, JAMES C, 3600 E HARRY, 67218-3713  
689-5043 4004830940  
57 M 4804 90 RO

MARSH MD, CONNIE M, 1100 N ST FRANCIS ST #400, 67214-2878  
264-3222 1902752362  
47 F 1902 78 P

MARSH MD, HENRY O, 2417 PLUMTHICKET CT, 67226-1524  
0 1611431721  
18 M 1611 46 OO

MARTIN JR MD, GLEN E, 7504 E 10TH ST CIR N, 67206-3855  
0 1902490457  
20 M 1902 49 OO



MARTIN MD, RONALD L, 1010 N KANSAS ST, 67214-3199

261-2669 1606710824  
45 M 1606 80 P

MARYMONT JR MD, JESSE H, 550 N HILLSIDE, 67214-4976

688-2847 3515540368  
28 M 3515 64 PATH

MASTIO JR MD, GEORGE J, 14 SAINT JAMES PL, 67206-0000

0 1902520470  
25 M 1902 52 OO

MATASSARIN MD, BENJAMIN M, 551 N HILLSIDE #410, 67214-4927

684-3838 1902450412  
20 M 1902 45 IM

MATASSARIN MD, FREDERICK W, 743 N EMPORIA, 67214-3707

265-2382 1902370397  
15 M 1902 37 U

MAURICIO MD, DENNY G, 2456 N WOODLAWN, 67220-3902

685-1382 1401850836  
54 M 0 87 FP

MAWDSLEY MD, MICHAEL W, 1010 N KANSAS, 67214-3124

261-2622 1902741662  
49 M 1902 75 PD

MAYUR MD, NITIN N, 3311 E MURDOCK ST, 67208-0000

689-9367 0  
60 M 49528 0 END

MBOYLE MD, MARILEE, 818 N EMPORIA STE 200, 67214-3788

263-0296 1902770867  
52 F 1902 78 GS

MCLANAHAN MD, WARD A, 1515 S CLIFTON STE 130, 67218-2951

684-8211 3005480409  
22 M 3005 49 ORS

MCCLELLAN MD, ERNEST L, PO BOX 8149, 67208-0149

685-9633 4802700895  
38 M 4802 73 AN

MCCOWN MD, ROBERT B, 3333 E CENTRAL #510, 67218-3713

685-1228 2846770235  
52 M 2846 87 FP

MCCOY MD, C PATRICK, 1650 GEORGETOWN #200, 67218-4127

686-7327 1902791261  
53 M 1902 83 AN

MCCOY MD, CHARLES P, 1211 RUTLAND, 67206-0000

0 3006420302  
17 M 3006 42 OO

MCDONALD MD, TERENCE, 550 N HILLSIDE, 67214-0000

688-2239 1902821186  
52 M 1902 92 IM

MCDONOUGH MD, W DAVID, 3311 E MURDOCK, 67208-3054

689-9239 3305718337  
48 M 3305 82 U

MCGUIRE MD, CHARLES W, 3333 E CENTRAL STE 214, 67208-3109

685-1291 1803841124  
57 M 1803 0 DR

MCGUIRE MD, WILLIAM F, 8725 STONERIDGE, 67206-2440

0 4101431601  
17 M 4101 49 OO

MCINNIS MD, DALTON B, 2405 E PAWNEE, 67211-5455

685-2153 3901710766  
45 M 3901 88 FP

MCKAY MD, ROBERT S, PO BOX 782438, 67278-2438

685-4389 3901831067  
56 M 3901 84 AN

MCMASTER MD, JOHN F, 315 N HILLSIDE #B, 67214-4915

681-0423 2106821146  
54 M 2106 83 FP

MCMULLEN MD, BRUCE R, 1122 S CLIFTON, 67218-2913

682-5012 4002790713  
53 M 4002 80 IM

MCNAMARA MD, PATRICIA, 2703 E CENTRAL, 67214-4610

685-6521 0  
60 F 3806 91 OBG

MCNICKLE MD, GEORGE A, 222 S RIDGE RD, 67209-2113

945-0142 1902750742  
49 M 1902 0 FP

MCQUEEN MD, DAVID A, 905 N EMPORIA BOX 3298, 67214-3715

262-7598 64914750138  
47 M 64914 77 ORS

MEANS MD, MILA L, 818 CARRIAGE PKY, 67208-4511

685-8231 1902821232  
56 F 1902 83 FP

MEEK JR MD, JOSEPH C, 1010 N KANSAS ST, 67214-3199

261-2600 1902570582  
31 M 1902 57 IM

MEHTA MD, PRAFUL, 940 N TYLER STE 100, 67212-0000

721-1111 0  
48 M 49579 0 FP

MEISEL JR MD, RICHARD L, 3243 E MURDOCK STE 201, 67208-3005

688-7990 1902831254  
53 M 1902 84 OBG

MEISTER MD, GREGORY C, 1120 S CLIFTON, 67218-0000

681-2108 0  
58 M 3006 93 AN

MELEAN MD, JAIME, 1152 S CLIFTON AVE, 67218-2913

688-0321 17602670015  
40 M 17602 78 CD

MELHORN MD, J MARK, 625 N CARRIAGE PKY STE 125, 67208-4510

688-5656 1902791317  
53 M 1902 82 ORS

MELHORN MD, KATHERINE J, 3243 E MURDOCK ST LEVEL A, 67208-3052

688-3110 1902810532  
55 F 1902 83 PD

MENAKER MD, JEROME S, 2703 E CENTRAL ST, 67214-4610

685-1277 1002410423  
16 M 1002 49 OBG

MENDIONES MD, L MARLENE, 8100 E 22ND ST N #1700-3, 67226-2317

687-5733 1611701078  
45 F 1611 75 D

MENEHAN MD, H JAMES, 9006 PEPPERTREE CIR, 67226-1513

0 1902530581  
26 M 1902 53 OO

MENKING MD, F W MANFRED, 3311 E MURDOCK ST, 67208-3079

689-9336 40715610037  
34 M 40715 74 PD

MENKING MD, SUSAN M, 1010 N KANSAS ST, 67214-3199

261-2631 3840671461  
41 F 3840 77 PD

MERCADER MD, MARIO S, 1650 GEORGETOWN ST STE 200, 67218-4127

686-7327 74801690151  
43 M 74801 78 AN

MEREDITH MD, W TOM, 1035 N EMPORIA ST #105, 67214-2998

263-7285 4812610681  
35 M 4812 69 IM

MERRIFIELD MD, TERRY S, 818 CARRIAGE PKY, 67208-4511

685-8231 1002751221  
47 F 1002 76 FP

MERSHON MD, JAMES C, PO BOX 2517, 67201-2517

263-5889 1803630727  
37 M 1803 70 CD

MESSAMORE MD, DEBRA L, 551 N HILLSIDE ST STE 540, 67214-4928

685-7234 1902841250  
58 F 1902 0 OBG

MESSNER MD, STAN A, 8200 W CENTRAL ST, 67212-3661

721-4544 1902831262  
56 M 1902 84 FP

MEYER MD, WARREN E, 130 BRENDONWOOD CT, 67206-2102

684-9713 1606511139  
27 M 1606 58 OO

MICHELBAACH MD, ALBERT P, 4815 E CENTRAL, 67208-4014

686-4750 2101610643  
35 M 2101 66 IM

MILFELD MD, DOUGLAS J, 818 N EMPORIA STE 200, 67214-3788  
263-0296 4804720443  
45 M 4804 79 CDTs

MILLER MD, DAVID P, 7111 E 21ST, 67206-1078  
684-2851 2803770649  
50 M 2803 78 FP

MILLER MD, ROGER M, 1431 S BLUFFVIEW STE 205, 67218-3039  
687-3201 4102630888  
37 M 4102 83 BLB

MILLER MD, TODD A, 8200 W CENTRAL STE 1, 67212-3661  
721-4544 1902810559  
55 M 1902 82 FP

MILLS MD, PHILIP R, 8338 W 13TH, 67212-2900  
729-1030 512751938  
49 M 512 0 PM

MINNS MD, GAROLD O, 1010 N KANSAS ST, 67214-3199  
261-2650 1902760969  
51 M 1902 77 IM

MIRANDA MD, JOSEPH R, 3311 E MURDOCK, 67208-3054  
689-9422 4812791155  
52 M 4812 0 DR

MOELLER MD, CHRISTOPHER A, 835 N HILLSIDE, 67214-4913  
685-4395 1803831137  
55 M 1803 87 D

MONTGOMERYSHORT MD, RUTH G, 1019 W 50TH NORTH, 67204-2707  
0 1902370435  
10 F 1902 37 OO

MOORE MD, DENNIS F, 3311 E MURDOCK, 67208-3054  
689-9250 2101620878  
36 M 2101 64 HEM

MORFORD MD, RONALD G, 4165 N CLARENDON ST, 67220-1907  
688-2468 1902741395  
47 M 1902 75 EM

MORGAN III MD, LOUIS S, 8030 E KELLOGG, 67207-1808  
683-3811 3901480353  
22 M 3901 49 FP

MORGAN MD, DICK A, 1650 GEORGETOWN #200, 67218-4127  
686-7327 3901690641  
43 M 3901 0 AN

MORGAN MD, JAMES I, PO BOX 17007, 67217-0007  
522-2266 1606530834  
29 M 1606 56 FP

MORGAN MD, MITCH A, 3243 E MURDOCK STE 500, 67208-0000  
688-7300 1902891281  
63 M 1902 92 IM

MORGAN MD, RANDALL J, 345 N HILLSIDE, 67214-4905  
682-4572 1902770999  
52 M 1902 0 OBG

MORRIS MD, HARRY A, PO BOX 3298, 67201-3298  
262-7598 3605800717  
53 M 3605 91 ORS

MORRISON MD, RICHARD L, 1148 S HILLSIDE ST STE 102, 67211-4005  
684-3391 1902670676  
42 M 1902 68 FP

MORROW MD, THOMAS F, 3310 E DOUGLAS AVE, 67208-3310  
685-1443 5606460980  
21 M 5606 51 P

MORTENSEN MD, STEEN E, 3311 E MURDOCK, 67208-0000  
689-9565 0  
42 M 29703 0 RHU

MOSER MD, SCOTT E, 3340 E CENTRAL ST, 67208-3104  
688-3070 4804802351  
55 M 4804 87 FP

MOSIER MD, STANLEY J, 818 CARRIAGE PKY, 67208-4511  
685-8231 1902680701  
42 M 1902 69 FP

MROZ MD, MARY K, 3340 E CENTRAL ST, 67208-3104  
688-3070 1846810440  
57 F 2846 87 FP

MUELLER MD, MICHAEL A, 1650 S GEORGETOWN ST STE 200, 67218-4127  
686-7327 1902861242  
60 M 1902 89 AN

MULLINIX MD, JANICE M, 3311 E MURDOCK ST, 67208-3079  
689-9137 2802731089  
47 F 3006 77 N

MURPHY MD, BARRY L, 3243 E MURDOCK ST STE 500, 67208-3008  
688-7300 1902710767  
45 M 1902 72 IM

MURPHY MD, DUANE A, 3243 E MURDOCK ST STE 200, 67208-3005  
685-1491 1902650659  
32 M 1902 66 ORS

MURPHY MD, PATRICK L, 7150 E HARRY ST, 67207-2991  
687-2651 3901811198  
55 M 3901 82 FP

MURPHY MD, PAUL M, 3600 E HARRY ST, 67218-3713  
689-5050 3006510492  
28 M 3006 57 R

MURPHY MD, PAUL W, 8911 E ORME ST, 67207-2473  
686-5151 1902821348  
49 M 1902 83 P

MURPHY MD, WILLIAM R C, 818 N EMPORIA ST STE 200, 67214-3788  
263-0296 1602680441  
43 M 1611 0 CDTs

MURRAY MD, KENT B, VA MED CTR 5500 E KELLOGG DR, 67218-1698  
685-2221 3901730872  
47 M 3901 74 IM

MURROW MD, RICHARD W, 3243 E MURDOCK ST STE 500, 67208-3008  
688-7300 1902851280  
57 M 1902 86 N

MYRICK MD, MICKEY C, 1131 S CLIFTON AVE, 67218-2990  
689-5500 3005740702  
42 M 1803 0 FP

NACHTIGALL MD, ANDREW, PO BOX 47570, 67201-7570  
283-5880 1902590621  
28 M 1902 64 PD

NASH MD, CYNTHIA I, 9350 E CENTRAL ST, 67206-2555  
636-2662 5107880536  
60 F 5107 89 FP

NEEL MD, JAMES W, 551 N HILLSIDE STE 410, 67214-0000  
684-3838 0  
53 M 1902 92 CD

NELSON JR MD, GUST H, 9127 AUTUMN CHASE ST, 67206-4021  
0 1902460426  
23 M 1902 46 OO

NELSON MD, GERALD D, 825 N HILLSIDE ST, 67214-4913  
688-7500 1902600601  
34 M 1902 61 PS

NELSON MD, RUSSELL A, 550 N HILLSIDE ST, 67214-4976  
651-8580 1902450510  
18 M 1902 45 PD

NESMITH MD, LESLIE W, 530 N LORRAINE ST STE 100, 67214-4837  
683-5611 1902660760  
40 M 1902 67 OPH

NETHERTON MD, DAVID M, 315 N HILLSIDE ST STE A, 67214-4915  
686-3391 2803810748  
55 M 2803 82 FP

NEUMAN MD, MICHAEL J, 929 N SAINT FRANCIS, 67214-3882  
268-5922 5605860933  
60 M 5605 91 DR

NEWBY MD, JAMES P, 818 N EMPORIA ST STE 200, 67214-3788  
263-0296 1902590656  
34 M 1902 70 CDTs

NEWLIN MD, PHILIP L, 3311 E MURDOCK, 67208-0000  
689-9278 0  
61 M 1902 0 PD

NEWSOM MD, F CARTER, 3310 E DOUGLAS AVE, 67208-3310  
685-1443 1201430549  
18 M 1201 50 P



NICHOLAS MD, W JOHN, 551 N HILLSIDE STE 410, 67214-0000  
684-3838 0  
53 M 64914 0 CD

NIELSEN MD, MARY L, 3333 E CENTRAL ST STE 721, 67208-3114  
681-2741 1902771081  
47 F 1902 78 PATH

NIERNBERGER D O, JERRY E, 3236 N ROCK RD, 67226-0000  
634-1200 2878850541  
52 M 2878 86 GP

NIXON MD, WILLIAM A, 2916 MENLO, 67211-3838  
0 1902441111  
16 M 1902 44 OO

NOLAN D O, PHYLLIS C, 551 N HILLSIDE STE 410, 67214-0000  
684-3838 3979830113  
59 F 3979 0 GP

NOLLA MD, LORAIN B, 3311 E MURDOCK, 67208-0000  
689-9234 1902890161  
60 F 1902 90 OBG

NORMAN MD, BENJAMIN R, 2757 S SENECA, 67217-2862  
264-5182 1902851361  
56 M 1902 86 FP

NORRIS MD, ROBERT P, 8649 E CHERRY CREEK CT, 67207-5218  
0 1902430594  
17 M 1902 43 OO

NORTH MD, DORIS G, 1148 S HILLSIDE, 67211-4005  
684-5257 1902470413  
16 F 1902 47 FP

NORTON MD, ROBERT K, 3311 E MURDOCK, 67208-3054  
689-9235 1001570702  
32 M 1001 67 PD

O'DONNELL MD, LEONARD A, 32 NORFOLK, 67208-4425  
0 2530183  
27 M 1902 55 OO

OCHSNER MD, BRUCE B, 1100 N TOPEKA ST, 67214-2810  
263-6273 1902650667  
39 M 1902 66 OPH

ODENHEIMER MD, BURTRAM J, 3311 E MURDOCK, 67208-3054  
689-9137 2105731011  
48 M 2105 73 N

OLMSTEAD MD, CALVIN G, 818 N EMPORIA STE 411, 67214-3728  
268-6856 6002790139  
50 M 6002 84 N

OLSON MD, DAN E, 1010 N KANSAS ST, 67214-3199  
261-2650 702731321  
42 M 702 85 PUD

ORTH-BAALMAN MD, DIANE M, 222 S RIDGE RD, 67209-2113  
945-5400 1902821402  
56 F 1902 83 PD

OSBORNE MD, CONRAD C, 855 N HILLSIDE, 67214-4913  
685-1381 1902670714  
38 M 1902 68 FP

OSIO MD, ANTONIO L, 4127 E KELLOGG, 67218-1336  
689-8677 26404660097  
41 M 26404 72 EM

OSOBA MD, WILLIAM G, 2208 W 13TH ST, 67203-1964  
943-9391 2802510635  
25 M 2802 54 FP

OSTER MD, JOYCE A, 3311 E MURDOCK, 67208-3054  
689-9422 1902791422  
54 F 1902 80 DR

OUANO JR MD, BIBIANO B, 1431 BLUFFVIEW ST #102, 67218-3039  
684-5094 74801634391  
40 M 74801 79 U

OWEN MD, LARUE W, 236 N BELMONT, 67208-3805  
0 1902500517  
19 M 1902 50 OO

OWEN MD, PERE A, 1120 S CLIFTON, 67218-2913  
681-2108 1902640700  
37 M 1902 65 AN

OXLEY MD, DWIGHT K, 550 N HILLSIDE, 67214-4910  
688-2810 1902620644  
36 M 1902 63 PATH

OZANNE MD, STEPHEN, 1507 W 21ST, 67203-2449  
838-2020 2301811147  
56 M 2301 91 ORS

PAGE MD, RUTH, 1051 N STRATFORD, 67206-1347  
0 1902430616  
13 F 1902 43 OO

PALKO MD, WILLIAM M, 1159 N RUTLAND CT, 67206-3833  
688-2809 4114820682  
56 M 4114 87 BLB

PALMER MD, DAVID L, PO BOX 9450, 67277-0450  
722-9132 1902630631  
37 M 1902 64 A

PANKOW MD, KIMBERLY J, 2939 N ROCK RD S-100, 67226-1100  
636-4344 1902832153  
55 F 1902 85 P

PANKOW MD, LARRY M, 2939 N ROCK RD #100, 67226-1100  
636-4344 1902831424  
49 M 1902 85 P

PARKER MD, HAROLD L, 7027 FARMVIEW CT, 67206-1075  
0 1902670731  
32 M 1902 68 OO

PARMAN MD, CRAIG R, 2757 S SENECA, 67217-2862  
264-5182 1902841403  
56 M 1902 87 FP

PASSMAN MD, STEVEN M, 835 N HILLSIDE, 67214-4913  
685-4395 2803730671  
47 M 2803 83 D

PATTON MD, J MICHAEL, 2535 E LINCOLN, 67211-3800  
686-2111 3005780941  
51 M 3005 79 FP

PAXTON MD, EDWARD S, 3600 E HARRY, 67218-3713  
689-5672 2802770815  
51 M 2802 83 PATH

PAY MD, NORMAN T, 929 N ST FRANCIS, 67214-3821  
268-5914 74802680191  
45 M 74802 77 NR

PEEL MD, KERRY A, 816 SPAULDING, 67203-3258  
267-8521 14303870017  
48 M 14303 90 FP

PEERY MD, WILLIAM H, 1010 N KANSAS ST, 67214-3199  
261-2650 4802731103  
46 M 4802 82 IM

PELLETIER JR MD, LAWRENCE L, 5500 E KELLOGG, 67218-1607  
651-3654 3501680841  
42 M 3501 71 IM

PENCE MD, CHARLES D, 3311 E MURDOCK, 67208-3054  
689-9468 1902680779  
42 M 1902 69 ORS

PENNER MD, STEVEN D, 855 N HILLSIDE, 67214-4913  
685-1381 1902831441  
55 M 1902 86 FP

PENNINGTON MD, KATHERINE, 2113 S BLUFF CT, 67218-4924  
0 1902430641  
16 F 1902 43 OO

PERALES MD, MERCEDES, 1100 N SAINT FRANCIS ST #400, 67214-2878  
264-3222 4934810081  
57 F 0 85 P

PERVAIZ MD, SYED M, 835 N HILLSIDE ST, 67214-0000  
685-4395 1102881687  
49 M 1102 92 D

PETERIE MD, JERRY D, 818 N EMPORIA STE 305, 67214-3727  
264-3505 1902752559  
48 M 1902 76 IM

PETERS MD, THOMAS J, 3311 N MURDOCK, 67208-3054  
689-9190 2803770762  
47 M 2803 79 IM

PETERSON MD, STACY L, 818 N EMPORIA STE 305, 67214-3727  
265-1441 0  
55 M 1902 81 GS

PHILLIPS MD, DENNIS G, 1969 W 21ST ST, 67203-2106  
832-9024 1902851409  
58 M 1902 89 FP

PHIPPS MD, JACK G, 117 BRENDENWOOD CT, 67206-2101  
0 1902530661  
21 M 1902 53 OO

PIAZZA D O, RICHARD S, 501 N MAIZE RD, 67212-0000  
721-5000 0  
57 M 2879 92 GP

PIBURN MD, MARVIN F, 125 N ZELTA, 67206-2750  
0 1803480377  
22 M 1803 80 OO

PICKERT MD, CURTIS B, 550 N HILLSIDE, 67214-0000  
688-7190 1902841446  
57 M 1902 85 PD

PINSKER MD, JACOB A, 556 BROADMOOR CT, 67206-1647  
0 1902350345  
6 M 1902 35 OO

PIRELA-CRUZ MD, MIGUEL A, 3311 E MURDOCK ST, 67208-3079  
689-9282 4113801218  
52 M 4113 92 ORS

POLINER MD, LAWRENCE R, 551 N HILLSIDE ST STE 410, 67214-4927  
684-3838 3520690611  
43 M 3520 83 CD

POLING MD, TERRY L, 7602 E HARRY ST, 67207-3128  
682-7411 1902620717  
36 M 1902 63 FP

POLLMAN MD, STANLEY E, 3600 E HARRY ST, 67218-3713  
689-5668 0  
30 M 3007 84 PATH

POLLOCK MD, ANTHONY G A, 825 N EMPORIA ST, 67214-3709  
264-2806 91905710023  
45 M 80305 76 ORS

POOLE MD, BERNARD T, 825 N EMPORIA ST, 67214-3709  
264-2806 53902620318  
37 M 53902 73 ORS

PORTER MD, GARRY L, 635 N MAIN, 67203-0000  
383-7291 1606610927  
35 M 1606 63 P

PORTER MD, MICHAEL G, 1515 S CLIFTON AVE STE 310, 67218-2953  
686-1991 1902851433  
59 M 1902 85 GS

POWERS MD, K DEAN, 2703 E CENTRAL ST, 67214-4610  
683-8386 1902470472  
23 M 1902 47 GYN

PRESKORN MD, SHELDON H, 1100 N ST FRANCIS STE 200, 67214-3821  
291-4774 1902740879  
48 M 1902 75 P

PROPECK MD, SCOTT, 551 N HILLSIDE STE 410, 67214-0000  
684-3838 0  
62 M 1606 93 IM

PURINTON MD, LEW W, 1431 S BLUFFVIEW DR STE 109, 67218-3039  
689-6396 1902480371  
23 M 1902 48 IM

RADOVANOV MD, RADMILA, PO BOX 780446, 67278-0446  
683-1243 95702600082  
34 F 95702 72 R

RAGHAVAN MD, PARULA P, 1035 N EMPORIA ST #245, 67214-2939  
262-7662 49501710783  
47 F 49501 80 IM

RAGHAVAN MD, PRAKASH V, 1035 N EMPORIA ST #245, 67214-2939  
262-7662 49501701091  
46 M 49501 80 CD

RANDALL MD, GEORGE R, 310 S HILLSIDE ST, 67211-2129  
684-2838 2802690617  
43 M 2802 77 OTO

RAUSA JR MD, FRANCISCO C, 1148 S HILLSIDE ST, 67211-4005  
682-4535 74810660264  
42 M 74808 76 IM

RAWCLIFFE JR MD, ROBERT A, 1111 N SAINT FRANCIS ST, 67214-2800  
267-1924 3501550778  
29 M 3501 63 ORS

RAZEK MD, HANA A, 929 N SAINT FRANCIS ST, 67214-3821  
268-6142 91504710217  
47 F 33004 0 PATH

RAZEK MD, ZACK A, 818 N EMPORIA ST STE 200, 67214-3788  
263-0296 60501700242  
46 M 60501 77 CDTs

READER MD, G WHITNEY, 933 N TOPEKA ST, 67214-3620  
263-5889 2101751492  
48 M 2101 81 CD

REALS MD, THOMAS C, 3243 E MURDOCK ST STE 500, 67208-3006  
688-7300 0  
59 M 3006 92 IM

REALS MD, WILLIAM J, UKSM WICHITA 1010 N KANSAS ST, 67214-3199  
261-2600 3006450422  
20 M 3006 46 PATH

REAZIN MD, WALTER L, 855 N HILLSIDE ST, 67214-4913  
685-1381 1902580740  
30 M 1902 59 FP

REDDI MD, RAGHUNATH P, 3600 E HARRY ST, 67218-3713  
689-5043 49521640226  
36 M 49521 80 R

REED MD, A J, 2456 N WOODLAWN ST, 67220-3902  
685-5691 3901650704  
40 M 3901 67 EM

REED MD, D CRAMER, 7520 E 21ST ST N STE 22, 67206-1086  
0 2802410703  
15 M 2802 46 OO

REED MD, DAVID D, 3333 E CENTRAL ST STE 214, 67208-3109  
685-1291 1902690880  
43 M 1902 70 DR

REED MD, WILLIAM R, 550 N HILLSIDE ST, 67214-4910  
651-8580 1611772145  
51 M 1611 83 NPM

REICHENBERGER MD, RONALD J, 7925 MEADOW PASS, 67205-1601  
794-8655 1902891516  
63 M 1902 90 FP

REISMAN MD, MICHAEL A, 201 S HILLSIDE ST, 67211-2128  
683-5688 4804752574  
50 M 4804 76 OPH

REISWIG MD, JEFFREY S, 8200 W CENTRAL ST STE 1, 67212-3661  
721-4544 1902861382  
60 M 1902 87 FP

RELIHAN MD, DONALD A, 655 N WOODLAWN ST, 67208-3648  
684-5158 1902540799  
27 M 1902 54 OPH

REMPEL MD, JOHN H, 1515 S CLIFTON AVE STE 240, 67218-2952  
685-1812 3901620660  
38 M 3901 70 PS

REYNOLDS MD, TERESA A, 3311 E MURDOCK ST, 67208-3079  
689-9400 1902810648  
52 F 1902 88 IM

RHODEN MD, CURTIS H, 3243 E MURDOCK ST STE 500, 67208-3008  
688-7300 1606590985  
33 M 1606 67 IM

RHODES MD, IVAN E, 3635 ELMWOOD DR, 67218-4822  
0 3901490383  
25 M 3901 56 OO

RHODES MD, LOWELL M, 1571 SIEFKIN LN, 67208-2415  
0 1902530742  
25 M 1902 53 OO

RIEGER MD, ERNEST H, 5922 POLO DR, 67208-2666  
0 1902560960  
29 M 1902 56 OO



RIGGS MD, KAY R, 3236 N ROCK RD STE 190, 67226-1337  
 634-1200 1902881961  
 54 F 1902 89 PD

RIORDAN MD, HUGH D, 3100 N HILLSIDE ST, 67219-3904  
 682-3100 5605570579  
 32 M 5605 59 P

RIVERA D O, DARLA K, 7111 E 21ST ST, 67206-1078  
 684-2851 2878870479  
 61 F 2878 89 FP

RIVERA-ORTIZ MD, EPIFANIO, 4127 E KELLOGG DR, 67218-1336  
 689-8677 4201760831  
 51 M 4201 0 FP

ROACH MD, NEIL E, 8911 E ORME CHARTER CL, 67207-2498  
 686-5108 1902670820  
 38 M 1902 68 P

ROAN MD, YEAI, 550 N HILLSIDE ST, 67214-4910  
 651-8580 38501670062  
 41 M 38501 82 PD

ROBERTS D O, ROGER W, PO BOX 47668, 67201-7668  
 684-3838 2879750230  
 49 M 2879 78 CD

ROBERTS MD, DANIEL K, 551 N HILLSIDE ST STE 540, 67214-4928  
 685-7234 3005610582  
 36 M 3005 71 OBG

ROBERTSON MD, JOSEPH K, 9105 PEPPERTREE CIR, 67226-1516  
 263-0296 3901660793  
 41 M 3901 68 GS

ROBICHAUX MD, JOHN C, 3311 E MURCOCK ST, 67208-3079  
 689-9344 2101781162  
 52 M 2101 0 D

ROBINSON MD, G DONALD, 3333 E CENTRAL ST STE 610, 67208-3113  
 686-6659 1902540811  
 28 M 1902 54 PD

ROBINSON MD, ROBERT H, 558 N STRATFORD ST, 67206-1528  
 0 1902530769  
 20 M 1902 53 OO

ROBL MD, DAVID A, 8200 W CENTRAL ST STE 1, 67212-3661  
 721-4544 1902742201  
 48 M 1902 76 FP

RODRIGUEZTOCKER MD, LILIA, 225 PENROSE DR, 67206-2119  
 0 27501490402  
 21 F 27501 57 OO

ROHLMAN MD, VALERIE C, 818 N EMPORIA ST STE 305, 67214-0000  
 264-3505 0  
 59 F 1902 0 ID

ROMALIS MD, BRIAN E, 1431 S BLUFFVIEW ST STE 203, 67218-3039  
 682-5069 6201630086  
 39 M 6201 73 P

ROSE MD, SHELBY D, 3333 E CENTRAL ST STE 721, 67208-3114  
 681-2741 2012680476  
 40 M 2012 71 PATH

ROSEBRAUGH MD, CURTIS J, 5500 E KELLOGG ST, 67218-1607  
 685-2221 1902861447  
 57 M 1902 89 IM

ROSEN MD, DAVID, 818 N EMPORIA STE 105, 67214-3725  
 263-4311 1902740950  
 48 M 1902 75 PD

ROSENBERG MD, THOMAS F, 2627 E CENTRAL ST, 67214-4608  
 684-0501 1642680575  
 41 M 1642 72 A

ROSS IV MD, ALBERT M, 3311 E MURDOCK, 67208-3054  
 689-9160 1902851522  
 58 M 1902 90 PD

ROSS MD, DENNIS LEE, 1035 N EMPORIA ST #105, 67214-2998  
 263-7285 3005730855  
 47 M 3005 78 NEP

ROWLAND MD, JOHN C, 3333 E CENTRAL ST STE 408, 67208-3111  
 682-0411 0  
 53 M 1902 92 PD

RUMISEK MD, JOHN D, 818 N EMPORIA STE 200, 67214-3788  
 263-0296 4804752345  
 50 M 4804 0 CDTs

RUSSELL MD, PHILIP W, 3311 E MURDOCK, 67208-3054  
 689-9351 1902441294  
 22 M 1902 44 IM

SABANGAN MD, JOEL S, 551 N HILLSIDE STE 410, 67214-0000  
 684-3838 0  
 56 M 74809 92 PUD

SABIN JR MD, GEORGE M, 6412 E 9TH, 67206-1410  
 0 5002390304  
 12 M 5002 66 OO

SABOOR MD, SYED A, 1725 E DOUGLAS, 67211-1610  
 264-8989 49520610234  
 35 M 49520 0 P

SACK MD, JOSEPH M, 7111 E 21ST, 67206-1078  
 684-2851 1902871515  
 60 M 1902 88 FP

SADIQ MD, SULEMAN, 1144 N SAINT FRANCIS ST, 67214-2882  
 267-0159 70401630161  
 40 M 70401 74 TS

SANCHEZ MD, JOSE J, 3311 E MURDOCK, 67208-3054  
 689-9287 1643811479  
 54 M 1643 87 PD

SANTOS MD, JOAQUIN G, 3243 E MURDOCK STE 500, 67208-3008  
 688-7300 1902810672  
 49 M 1902 81 IM

SANTOSCOY MD, GILBERT S, 3311 E MURDOCK, 67208-3054  
 689-9124 4812620776  
 38 M 4812 70 GS

SARGENT D O, DAVID W, 3311 E MURDOCK, 67208-3054  
 689-9227 2878790238  
 53 M 2878 0 OTO

SCANLAN MD, TIMOTHY M, 3600 E HARRY, 67218-3784  
 689-5303 2604711358  
 46 M 2604 78 FP

SCHEINBERG MD, KENNETH, 3311 E MURDOCK, 67208-3054  
 689-9227 1642690554  
 42 M 1642 0 ENT

SCHLACHTER MD, ERNEST R, 406 E CENTRAL, 67202-1058  
 265-0705 1902520569  
 24 M 1902 52 FP

SCHLAGECK MD, JOSEPH G, 10300 W MAPLE, 67209-3135  
 721-4544 1902821691  
 55 M 1902 85 FP

SCHLICHER MD, JOHN E, 3311 E MURDOCK, 67208-3054  
 689-9344 1803660936  
 40 M 1803 72 D

SCHLUETER MD, JOHN J, 144 S HILLSIDE, 67211-2147  
 685-9289 3841560654  
 31 M 3841 62 R

SCHNEIDER MD, SETH A, 2627 E CENTRAL, 67214-4608  
 684-0501 1642770779  
 53 M 1642 80 A

SCHNELLE MD, JOACHIM, 4145 E KELLOGG, 67218-1336  
 682-6551 40933700030  
 44 M 40933 73 FP

SCHOPF MD, CLIFTON C, 222 S RIDGE RD, 67209-2113  
 945-0142 1902570779  
 29 M 1902 57 FP

SCHWARTZ MD, V DEAN, 335 WHITFIELD PL, 67206-1918  
 0 1902480401  
 24 M 1902 48 OO

SCOTT MD, WILLIAM H, 1431 S BLUFFVIEW STE 111, 67218-3039  
 685-8262 4901650433  
 41 M 4901 73 CD

SEERY MD, DONALD S, 1131 S CLIFTON, 67218-0000  
 689-5500 1902901414  
 51 M 1902 91 FP

SELLBERG MD, MARTIN E, 1520 S CLIFTON, 67218-2921  
689-5775 1902851581  
56 M 1902 86 AM

SEN SARMA MD, PRONAB K, 1144 N SAINT FRANCIS ST, 67214-2882  
267-0159 49518670050  
45 M 49518 81 CD

SHAH MD, MUKHTAR H, 1725 E DOUGLAS, 67211-1610  
264-8989 70404640150  
40 M 70404 77 P

SHAH MD, SUBHASH H, 2620 E CENTRAL ST, 67214-0000  
688-6866 0  
59 M 49576 92 N

SHAMPAINE MD, ERIC L, 1650 GEORGETOWN STE 200, 67218-0000  
686-7327 2501882219  
0 M 2501 0 AN

SHAPIRO MD, WILLIAM M, 818 N EMPORIA STE 304, 67214-3727  
263-0348 1606761917  
45 M 1606 84 NS

SHAW MD, RICHARD C, 825 N HILLSIDE, 67214-4913  
688-7500 1902610720  
35 M 1902 62 PS

SHELLITO MD, JOHN G, PO BOX 781774, 67278-1774  
0 1606431933  
18 M 1606 49 OO

SHELLITO MD, JOHN L, 3311 E MURDOCK, 67208-3054  
689-9124 2407781271  
52 M 2407 84 GS

SHIELD MD, CHARLES, 818 N EMPORIA ST STE 200, 67214-3788  
263-0296 2802720851  
46 M 2802 81 GS

SHOFFNER MD, RICHARD W, 3311 E MURDOCK ST, 67208-3079  
689-9271 3901791405  
53 M 3901 82 IM

SHRADER MD, C ERIC, 655 N WOODLAWN ST, 67208-3648  
684-5158 1902781702  
47 M 1902 79 OPH

SHRADER MD, DOYLE A, 119 N ARMOUR ST, 67206-2001  
0 1902410623  
16 M 1902 41 OO

SHUCK D O, MICHAEL W, 4805 W CENTRAL ST, 67212-2399  
943-3203 2878890224  
56 M 2878 92 FP

SHURTZ MD, GLEN L, 3333 E CENTRAL ST STE 214, 67208-3109  
685-1291 4802782298  
40 M 4802 81 R

SIFFORD MD, R LAWRENCE, 1040 RIVERSIDE AVE, 67203-3254  
0 1803520611  
25 M 1803 58 OO

SIMMS MD, DAVID A, 3311 E MURDOCK, 67208-3054  
689-9422 3401760538  
50 M 3401 83 DR

SKIBBA MD, RICHARD M, 3311 E MURDOCK ST, 67208-3079  
689-9477 5606700891  
43 M 5606 72 GE

SLUTSKY MD, LAWRENCE J, 929 N SAINT FRANCIS ST, 67214-3821  
268-5922 3501721122  
46 M 3501 79 DR

SMITH D O, JOHN P, 731 N MCLEAN BLVD STE 100, 67203-4935  
945-7309 2878750732  
49 M 2878 81 GS

SMITH D O, JAMES A M, 551 N HILLSIDE ST #410, 67214-4927  
684-3838 4177780940  
50 M 4177 88 IM

SMITH MD, ALVIN L, 929 N SAINT FRANCIS ST, 67214-3821  
268-5470 5606570874  
28 M 5606 72 PATH

SMITH MD, LINDALL E, 3333 E CENTRAL ST STE 408, 67208-3111  
682-0411 1902821771  
55 M 1902 0 PD

SMITH MD, MARK A, 551 N HILLSIDE STE 410, 67214-0000  
684-3838 0  
54 M 1902 0 CD

SMITH MD, WILLIAM E, 1010 N KANSAS, 67214-0000  
261-2650 0  
62 M 1902 89 IM

SNODGRASS MD, TED C, 8100 E 22ND ST N STE 2200, 67226-2376  
683-4334 0  
61 M 3905 0 FP

SNYDER MD, GREGG M, 902 N HILLSIDE ST, 67214-3220  
687-1441 1803541023  
27 M 1803 66 NS

SNYDER MD, STEPHANIE F, 3311 E MURDOCK ST, 67208-3079  
689-9270 1902790744  
53 F 1902 81 IM

SOLLO MD, DAVID G, 1650 GEORGETOWN #200, 67218-4127  
686-7327 4804841917  
59 M 4804 89 AN

SOLLO MD, NATALIE R, 3333 E CENTRAL, 67208-3121  
682-0411 4804851335  
59 F 4804 89 PD

SOLOMON MD, HERMAN, 835 N HILLSIDE, 67214-4913  
685-4395 2701620561  
37 M 2701 69 D

SOLTZ MD, ROBERT A, 3311 E MURDOCK, 67208-3054  
689-9320 2803740821  
47 M 2803 77 PD

SOMERS MD, MARVIN M, 2506 BENJAMIN, 67204-5522  
0 1902480427  
23 M 1902 48 OO

SPANN MD, RICHARD W, 3243 E MURDOCK STE 500, 67208-3008  
688-7300 1902650870  
40 M 1902 66 PUD

SPARKS MD, STEPHEN T, 550 N HILLSIDE STE 250, 67214-4976  
264-6555 512841198  
56 M 512 89 OM

SPEARS MD, CHESTER A, 911 N HILLSIDE, 67214-3219  
686-7161 2834761575  
50 M 2834 81 PATH

SPEED MD, JAMES K, 3243 E MURDOCK STE 500, 67208-3008  
688-7300 3901821487  
56 M 3901 90 IM

SPRINGER MD, MARK J, 3311 E MURDOCK, 67208-3054  
689-9311 1902871612  
61 M 1902 89 PD

ST CLAIR D O, DWIGHT, 1725 E DOUGLAS ST, 67211-0000  
264-8989 0  
60 M 2878 92 P

STAATS MD, RODNEY M, 550 N HILLSIDE, 67214-4910  
688-2380 1902831726  
55 M 1902 0 IM

STAMPS MD, PHIL, 3600 E HARRY, 67218-3784  
689-5668 3901630746  
37 M 3901 0 PATH

STARK MD, JAMES R, 719 BROOKFIELD RD, 67206-1533  
0 1902441472  
20 M 1902 44 OO

STECKLEY MD, RICHARD A, 1035 N EMPORIA STE 210, 67219-2504  
265-1308 2105741271  
49 M 2105 80 IM

STEELBERG MD, ELSIE, 2939 N ROCK RD #100, 67226-1100  
636-4344 1606601171  
34 F 1606 84 P

STEIN MD, PAUL S, 551 N HILLSIDE #330, 67214-4926  
685-2377 3305660689  
40 M 3305 73 NS

STEINBERGER MD, RICHARD E, 851 N HILLSIDE, 67214-4913  
685-1371 56120810036  
53 M 56120 0 U



STEMBRIDGE MD, TRAVIS W, 551 N HILLSIDE STE 540, 67214-4928

685-7234 4802761754  
47 M 4802 78 OBG

STEPHANZ JR MD, GERALD B, 1035 N EMPORIA STE 105, 67214-2938

263-7285 1902831734  
57 M 1902 84 IM

STEVENS MD, WM. MICHAEL, 551 N HILLSIDE STE 540, 67214-4928

685-7234 1902831751  
55 M 1902 0 OBG

STOFFER MD, ROBERT P, 10109 ALAMO ST, 67212-1263

0 1902480451  
26 M 1902 48 OO

STREET MD, DAVID E, 818 N EMPORIA STE 200, 67214-3788

263-0296 2101611038  
35 M 2101 67 GS

STREIT MD, JEROME G, 1131 S CLIFTON, 67218-2912

689-5500 1902771472  
48 M 1902 78 FP

STRICKLAND MD, M H VAN, 710 N WOODCHUCK ST, 67212-3628

722-4800 4804742111  
51 M 4804 0 A

SUERO MD, JESUS T, 1148 S HILLSIDE, 67211-4005

681-3371 74802570655  
33 M 74802 57 PUD

SULLIVAN MD, LEONARD L, 3311 E MURDOCK, 67208-3054

689-9454 1902610789  
35 M 1902 62 PD

SVOBODA MD, LOIS V, 818 CARRIAGE PKY, 67208-4511

685-8231 1602660784  
39 F 1602 81 FP

SVOBODA MD, WILLIAM B, 1035 N EMPORIA ST #235, 67214-2939

267-5215 1602630583  
36 M 1602 81 PDN

SWARTZ MD, MARSHA A, 818 N EMPORIA STE 305, 67214-3727

264-3505 1902861684  
44 F 1902 87 ID

SWEET MD, DONNA E, 1010 N KANSAS ST, 67214-3199

261-2622 1902791813  
48 F 1902 80 IM

SWEET MD, ROBERT A, 9350 E CENTRAL, 67206-0000

636-2662 3005901056  
64 M 3005 91 FP

SZYMKE MD, THOMAS E, 1151 N ROCK RD, 67206-0000

634-3500 2507731093  
47 M 2507 93 PM

TAN MD, DONALD C-S, 808 N EMPORIA, 67214-3710

268-5908 512660924  
34 M 512 89 RO

TARVER MD, STEPHEN D, 1650 GEORGETOWN STE 200, 67218-4127

686-7327 1902851751  
58 M 1902 0 AN

TATPATI MD, DANIEL A, 1144 N SAINT FRANCIS ST, 67214-2882

267-0159 49535670039  
44 M 49535 78 TS

TATPATI MD, OLGA A, 200 S HILLSIDE, 67211-2127

687-3100 49535640041  
44 F 49535 78 PD

TAYLOR MD, BRENDA K, 1010 N KANSAS, 67214-3124

261-2650 2803850944  
58 F 2803 91 IM

TAYLOR MD, RICHARD J, 11 CYPRESS DR, 67206-2501

0 3006490335  
21 M 3006 58 PATH

TAYLOR MD, STEVEN L, 3311 E MURDOCK, 67208-3054

689-9422 1902771502  
46 M 1902 78 R

THAKOR MD, DENNIS S, 310 S HILLSIDE, 67211-2129

684-2838 2307821071  
57 M 2307 87 OTO

THELEN MD, J CHRISTINE, 7373 E 29TH ST N APT 1123, 67226-3405

0 5104370642  
13 F 5104 50 OO

THOMAS MD, DARYL L, 2318 E CENTRAL, 67214-4436

262-2415 1902821879  
56 M 1902 86 IM

THOMPSON MD, DANIEL M, BOX 4069, 67204-0069

0 1902500746  
19 M 1902 50 OO

TIGGES MD, THOMAS T, 3311 E MURDOCK, 67208-3054

689-9124 0  
60 M 1803 91 GPVS

TILLER MD, GEORGE R, 5101 E KELLOGG, 67218-1625

684-5255 1902670919  
41 M 1902 68 AM

TINTEROW MD, MAURICE M, 641 N WOODLAWN #29, 67208-3669

0 4802410706  
17 M 4802 46 OO

TOCKER MD, ALFRED M, 225 PENROSE, 67206-2119

0 4802400808  
15 M 4802 53 OO

TONN MD, GERHART R, 13600 E 37TH ST N, 67228-9518

0 1902441529  
16 M 1902 44 OO

TOOHEY MD, JOHN S, 3311 E MURDOCK, 67208-3054

689-9277 5605771388  
50 M 5605 82 ORS

TOSH MD, FRED E, 8308 LIMERICK LN, 67206-2320

0 4706541590  
30 M 4706 80 OO

TRAN MD, THOMAS (TUONG) M, 2600 E CENTRAL, 67214-0000

686-5555 94101720131  
39 M 94101 77 FP

TREGO MD, A JASON, 8404 W 13TH #180, 67212-2978

722-6000 1902842361  
55 M 1902 0 IM

TRETBAR MD, HARVEY A, 10 CYPRESS DR, 67206-0000

0 1902520712  
25 M 1902 52 OO

TREWEEKE MD, MICHAEL W, 551 N HILLSIDE #410, 67214-4927

684-3838 1902721157  
46 M 1902 73 IM

TROUTMAN D O, BETTY, 7717 E 29TH ST N, 67226-3403

636-5585 2878870916  
51 F 2878 0 FP

TRUJILLO MD, ANTERO A, 1431 S BLUFFVIEW STE 117, 67218-3039

685-6466 73701610218  
36 M 73701 81 AN

TRUONG D O, HAI K, 7111 E 21ST, 67206-1078

684-2851 0  
56 F 2878 91 FP

TRUONG D O, THANH N, 1144 N SAINT FRANCIS, 67214-2814

267-1059 2878860198  
57 M 2878 87 IM

TUCKER D O, DAVID A, 7200 W 13TH, 67212-2968

721-1200 2878850575  
54 M 2878 86 FP

TWARDOWSKI MD, RADOMYSL M, 551 N HILLSIDE ST STE 410, 67214-4927

684-3838 0  
49 M 2803 92 IM

UHLIG MD, PAUL N, 3311 E MURDOCK, 67208-3054

689-9300 1902781851  
53 M 1902 0 CDS

VAL-MEJIAS MD, JESUS E, 551 N HILLSIDE #410, 67214-4927

684-3838 23101690067  
45 M 23101 84 CD

VAN GALLERA MD, ROBERT, 3311 E MURDOCK ST, 67208-3079

689-9107 1902841861  
51 M 1902 0 FP

VAN GEEM MD, THOMAS A, 818 N EMPORIA ST STE 415, 67214-3728  
269-4355 3006831051  
54 M 502 89 OBG

VARENHORST MD, MICHAEL P, 530 N LORAIN ST STE 100, 67214-4837  
683-5611 1803801599  
52 M 1803 85 OPH

VAUGHAN MD, D ANN, 1010 N KANSAS ST, 67214-3124  
686-5151 1902710601  
45 F 1902 75 P

VEENIS MD, BLAKE C, 8338 W 13TH, 67212-0000  
729-1030 0  
63 M 4112 93 PM

VIERTHALER MD, LYLE D, 1650 S GEORGETOWN ST STE 200, 67218-4127  
686-7327 1902801126  
54 M 1902 81 AN

VIN ZANT MD, LARRY E, 13741 SAINT ANDREWS PL, 67230-1424  
0 1902400563  
10 M 1902 40 OO

VINE MD, DONALD LEE, 1010 N KANSAS ST, 67214-3124  
261-2622 511660564  
39 M 511 79 CD

VINZANT MD, WHITNEY L, 1515 S CLIFTON AVE #310, 67218-2953  
686-1991 1902711143  
45 M 1902 74 GS

WADE MD, EDWARD J, 818 N EMPORIA ST STE 101, 67214-3725  
263-1574 1902801142  
53 M 1902 83 AN

WADUD MD, ABDUL, 1543 S HILLSIDE ST, 67211-4018  
682-6814 70409600059  
35 M 70409 74 P

WAKEFIELD MD, KENNETH M, 1131 S CLIFTON AVE, 67218-2912  
689-5500 6201480122  
24 M 6201 86 FP

WALKER D O, MARSHALL D, 982 N TYLER RD #D, 67212-3271  
722-5811 2878720124  
41 M 2878 80 OTO

WALLING MD, ADRIAN E, 101 S WEBB RD #200, 67207-1315  
681-1152 80302710019  
47 M 80302 78 FP

WALLING MD, ANNE D, 1010 N KANSAS ST, 67214-3199  
261-2607 91902710031  
47 F 80302 0 PH

WALSH D O, LESLIE L, 1650 S GEORGETOWN ST K #200, 67218-4127  
686-7327 2879820548  
56 M 2879 0 AN

WARD MD, LARRY G, 1650 S GEORGETOWN ST K #200, 67218-4127  
686-7327 1902791911  
54 M 1902 82 AN

WARREN JR MD, JOHN W, 63 VIA VERDE, 67230-1604  
0 2501390863  
15 M 2501 49 OO

WARREN MD, LLOYD P, 1202 WILLOW LN, 67208-2668  
0 1902360570  
11 M 1902 36 OO

WARREN MD, WIRT A, 608 S BLUFF, 67218-2122  
0 2802330777  
9 M 2802 36 OO

WASWICK MD, WILLIAM A, 3243 E MURDOCK STE 404, 67208-3052  
0 3701870548  
61 M 3737 0 GS

WEAVER MD, JACK D, 1616 COOLIDGE, 67203-2912  
0 2802420865  
16 M 2802 46 OO

WEBB MD, DAVID E, 818 N EMPORIA STE 310, 67214-3727  
263-5891 1902781931  
53 M 1902 88 IM

WEBER JR MD, HUGO P, 1035 N EMPORIA ST #105, 67214-2998  
263-7285 702660718  
40 M 702 73 IM

WEIPPERT MD, EDWARD J, 10300 W MAPLE, 67209-3135  
721-4544 1902701202  
44 M 1902 71 FP

WELCH MD, LAUREN K, 551 N HILLSIDE #330, 67214-4926  
685-2377 1902610860  
35 M 1902 62 N

WENCEL MD, MARK L, 3311 E MURDOCK, 67208-3054  
689-9325 1902811113  
55 M 1902 0 PD

WENINGER MD, JOHN H, 1148 S HILLSIDE STE 12, 67211-4005  
682-6523 3005620693  
32 M 3005 63 FP

WESBROOK MD, C WILSON, 3311 E MURDOCK, 67208-3054  
689-9234 1902741247  
42 M 1902 75 OBG

WHEELER MD, NICKY RAY, 1515 S CLIFTON STE 390, 67218-2953  
684-0220 1902741255  
48 M 1902 74 PS

WHEELER MD, PINCKNEY R, 2168 BELLA VISTA, 67203-1514  
0 3901560896  
18 M 3901 57 OO

WHITAKER MD, JAMES A, 3243 E MURDOCK STE 500, 67208-3008  
688-7300 1902721211  
44 M 1902 74 IM

WHITE MD, CHARLES M, 18 VIA VERDE, 67230-1605  
0 3005410656  
15 M 3005 48 OO

WHITESIDE MD, WILLIAM H, 1431 S BLUFFVIEW S -108, 67218-3039  
681-0086 53902720304  
46 M 53903 84 PD

WILDER MD, LOWELL W, 655 N WOODLAWN, 67208-3648  
684-5158 4109620764  
35 M 4109 67 OPH

WILEY MD, CLARENCE L, PO BOX 49258, 67201-9258  
267-3268 4301770613  
50 M 4301 86 D

WILKINSON MD, LARRY K, 2456 N WOODLAWN, 67218-2921  
685-5696 1902741859  
46 M 1902 75 FP

WILLIAMS MD, CHARLES L, 554 N BROADMOOR CT, 67206-1647  
0 2834432024  
16 M 2834 50 OO

WILSON MD, ROBERT L, 841 N BROADWAY, 67214-3509  
263-6131 1902571040  
30 M 1902 57 OM

WINDHOLZ MD, ARTHUR F, 1969 W 21ST, 67203-2106  
832-9044 3901861705  
61 M 3901 87 FP

WINN MD, TERRIA L, PO BOX 48126, 67201-8126  
265-7241 1902822000  
56 F 1902 83 OPH

WISDOM MD, JAY K, 15 LYNNWOOD, 67207-1037  
0 1902420777  
12 M 1902 42 OO

WISNER JR MD, HARRY J, 5642 COE DR, 67208-2706  
0 3005431394  
17 M 3005 47 OO

WITTMANN MD, ALBERT F, 555 SAGEBRUSH, 67230-6664  
0 2834380954  
10 M 2834 40 OO

WOIWOOD MD, MARK D, 1650 GEORGETOWN #200, 67218-0000  
686-7327 0  
58 M 1803 93 AN

WOLF MD, PATRICK G, 1431 S BLUFFVIEW DR STE 109, 67218-3039  
685-3030 1902771634  
52 M 1902 78 IM

WOLFE MD, FREDERICK, 1035 N EMPORIA ST #230, 67214-2939  
263-2125 3508661532  
36 M 3508 69 RHU



WOOD MD, GARY B, 8527 BOXTHORN, 67226-1909

0	2802450993			
21	M	2802	51	OO

WOOD MD, ROBERT D, 1441 N ROCK RD STE 1001, 67206-1241

0	1902530963			
26	M	1902	53	OO

WOODHOUSE MD, CHARLES L, 46 ST CLOUD PL, 67230-1611

0	1902340561			
10	M	1902	34	OO

WOODRING MD, CATHY S, 222 S RIDGE RD, 67209-2113

945-0142	3546771708			
51	F	3546	82	FP

WOODS MD, MICHAEL S, 3311 E MURDOCK, 67208-0000

689-9153	0			
61	M	1902	88	GS

WOOLLEY MD, DOUGLAS C, 1010 N KANSAS, 67214-0000

261-2607	0			
49	M	519	0	FP

WRAY JR MD, REGINALD P, PO BOX 782438, 67278-2438

685-4389	4113661289			
40	M	4113	84	AN

WRAY MD, ALEXANDER J, 109 S SOCORA, 67209-1430

0	1902490783			
19	M	1902	49	OO

WRIGHT MD, STANLEY E, 2219 BROMFIELD CIR, 67226-1104

0	3901741351			
47	M	3901	75	OO

WU MD, JIN-TZE, 3333 E CENTRAL STE 214, 67208-3109

685-1291	24402670203			
41	M	38502	79	TR

WYATT-HARRIS MD, PATRICIA G, 3333 E CENTRAL #504, 67208-3112

683-6766	1902810851			
55	F	1902	82	OBG

YOON MD, CHANG SUP, BOX 782438, 67278-2438

685-4389	58303720241			
46	M	58303	81	AN

YOUNG MD, DOUGLAS L, 3311 E MURDOCK, 67208-3054

689-9107	1902711259			
42	M	1902	72	IM

YOUNG MD, ROBERT C, PO BOX 782438, 67278-2438

685-4389	1902852260			
46	M	1902	90	AN

YOUNGBERG MD, DEAN I, 959 N EMPORIA #201, 67214-3721

268-6075	1902721254			
0	M	1902	73	IM

YOUNGMAN DO, DARRELL J, 1035 N EMPORIA ST #210, 67214-2974

265-1308	4878790087			
52	M	4878	88	CD

ZARNOW MD, HILARY, 929 N ST FRANCIS, 67214-3821

268-5905	1611691994			
45	M	1611	74	R

ZATZKIN MD, JAY B, 818 N EMPORIA STE 403, 67214-3728

262-4467	2002741221			
46	M	2002	79	IM

ZEPICK MD, LYLE F, PO BOX 2517, 67201-2517

263-5889	6002740093			
50	M	6001	81	CD

ZIELKE MD, STEVEN L, 223 S HILLSIDE, 67211-2128

683-2666	1643821407			
53	M	1643	82	OBG

ZIMMERMAN MD, KENNETH D, 934 CRESTLINE, 67212-4526

526-3925	3901550998			
29	M	3901	58	OM

ZONGKER MD, PHILIP E, 3311 E MURDOCK, 67208-3054

689-9422	1902701261			
43	M	1902	71	R

ZWIACHER MD, KAYE F, 9350 E CENTRAL AVE #102, 67206-4332

684-4411	3901850509			
52	F	3901	91	P

## WINCHESTER — 913 (Shawnee County Medical Society)

HUSTON MD, FRANCIS W, PO BOX H, 66097-0408

0	1601340638			
6	M	1601	34	OO

## WINFIELD — 316 (Cowley County Medical Society)

BHARGAVA MD, BAIKUNTH N, 1317 WHEAT RD, 67156-4703

221-3200	49530640441			
37	M	49530	78	U

JOHNSON MD, TERESA F, 1317 WHEAT RD, 67156-4703

221-3200	1902810982			
55	F	1902	82	GS

JONES MD, TERRY G, 1317 WHEAT RD, 67156-4703

221-3200	0			
55	M	3840	0	FP

KAUL MD, ANAND N, 1317 WHEAT RD, 67156-4703

221-3200	49530610054			
39	M	49530	0	IM

MILLER MD, FRANKLIN R, 1910 DEE ST, 67156-1510

0	2401270739			
2	M	2401	54	OO

PRICE MD, PETER G, PO BOX 651, 67156-0651

221-9292	64901520338			
26	M	64901	57	GS

SAMUEL MD, CHANDY C, 1211 E 5TH, 67156-2441

221-6100	49527590166			
35	M	49527	76	GS

SHIPPEY MD, DEAN U, 204 CEDAR LN DR, 67156-8804

221-7129	64914800119			
49	M	64914	85	R

STURICH MD, JORGE M, 1211 E 5TH, 67156-2441

221-6100	64914771763			
54	M	64914	84	FP

TURNER MD, WADE A, 1317 WHEAT RD, 67156-4703

221-3200	0			
60	M	1902	92	IM

WELLS MD, BRUCE W, PO BOX 643, 67156-0643

221-3350	1902640947			
39	M	1902	65	IM

WHITE MD, R BURNLEY, PO BOX 745, 67156-0745

221-2950	1902520763			
24	M	1902	52	FP

WINBLAD MD, J KENT, 15 FLEETWOOD, 67156-5429

221-6100	1902761558			
51	M	1902	74	OBG

WINBLAD MD, JOHN M, 1211 E 5TH, 67156-2441

221-6100	1902810818			
55	M	1902	82	FP

## YATES CENTER — 316 (Allen County Medical Society)

ATKIN MD, J D, 1004 E MADISON, 66783-1314

625-2312	3901610052			
35	M	390	163	FP

VORHEES MD, VICTOR J, 204 S MAIN, 66783-1444

625-2162	1902681023			
36	M	1902	69	FP

WEBER MD, RUTH M, 204 S MAIN, 66783-1444

625-2162	2846840781			
60	F	1902	85	FP

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AMIRANI MD, HOSSEIN, 1911 I ST, IOWA CITY, IA, 52247-2038  
 ANDERSON MD, EUGENE G, 402 LA ABRA, GREEN VALLEY, AZ, 85614-2912  
 ANDERSON MD, WINSTAN L, 12602 CRYSTAL LAKE DR, SUN CITY WEST, AZ, 85375-2570  
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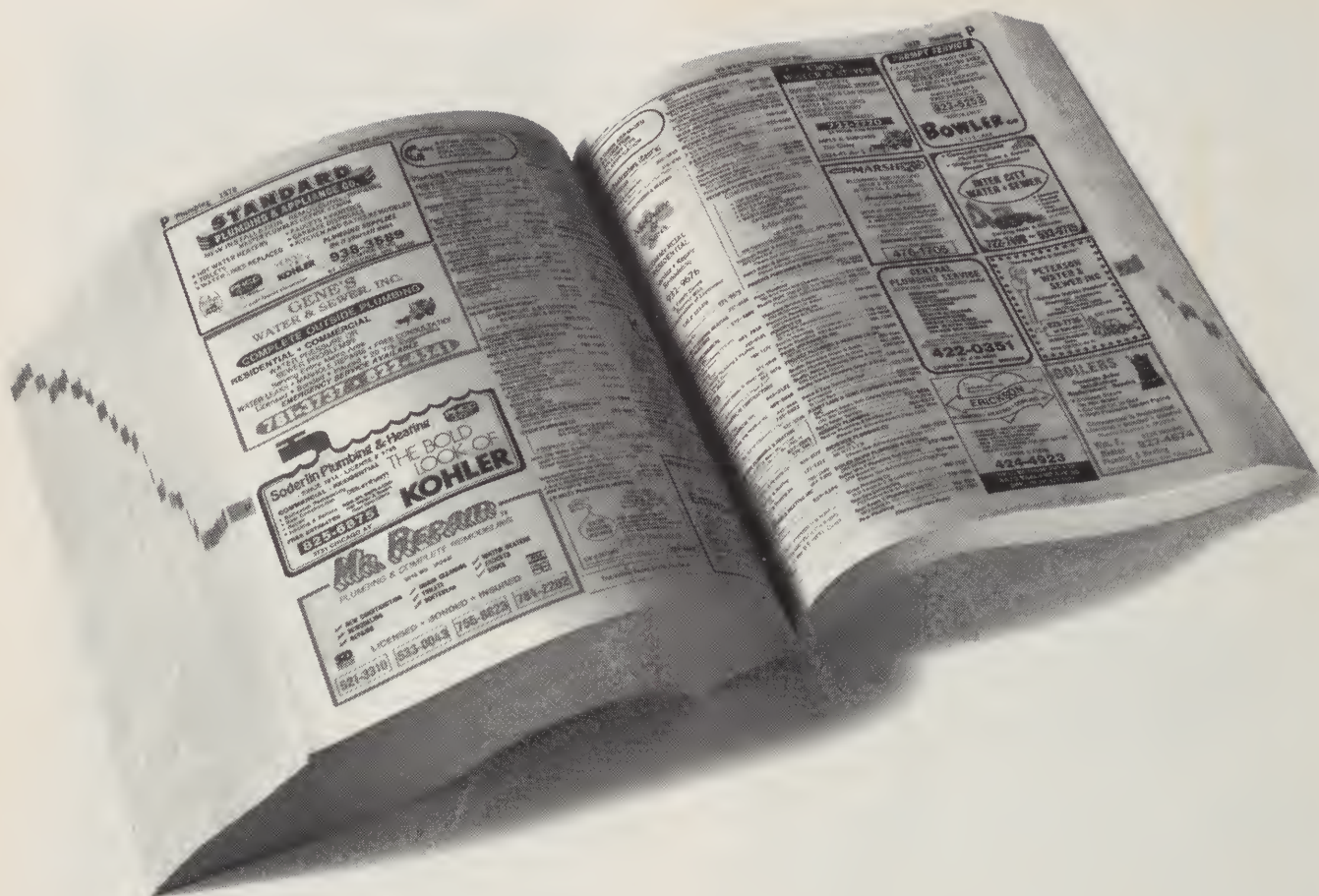
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# **PRAVACHOL® (Pravastatin Sodium Tablets)**

## **CONTRAINDICATIONS**

Hypersensitivity to any component of this medication.

Active liver disease or unexplained, persistent elevations in liver function tests (see WARNINGS).

**Pregnancy and lactation.** Atherosclerosis is a chronic process and discontinuation of lipid-lowering drugs during pregnancy should have little impact on the outcome of long-term therapy of primary hypercholesterolemia. Cholesterol and other products of cholesterol biosynthesis are essential components for fetal development (including synthesis of steroids and cell membranes). Since HMG-CoA reductase inhibitors decrease cholesterol synthesis and possibly the synthesis of other biologically active substances derived from cholesterol, they may cause fetal harm when administered to pregnant women. Therefore, HMG-CoA reductase inhibitors are contraindicated during pregnancy and in nursing mothers. **Pravastatin should be administered to women of childbearing age only when such patients are highly unlikely to conceive and have been informed of the potential hazards.** If the patient becomes pregnant while taking this class of drug, therapy should be discontinued and the patient apprised of the potential hazard to the fetus.

## **WARNINGS**

**Liver Enzymes:** HMG-CoA reductase inhibitors, like some other lipid-lowering therapies, have been associated with biochemical abnormalities of liver function. Increases of serum transaminase (ALT, AST) values to more than 3 times the upper limit of normal occurring on 2 or more (not necessarily sequential) occasions have been reported in 1.3% of patients treated with pravastatin in the U.S. over an average period of 18 months. These abnormalities were not associated with cholestasis and did not appear to be related to treatment duration. In those patients in whom these abnormalities were believed to be related to pravastatin and who were discontinued from therapy, the transaminase levels usually fell slowly to pretreatment levels. These biochemical findings are usually asymptomatic although worldwide experience indicates that anorexia, weakness, and/or abdominal pain may also be present in rare patients.

As with other lipid-lowering agents, liver function tests should be performed during therapy with pravastatin. Serum aminotransferases, including ALT (SGPT), should be monitored before treatment begins, every six weeks for the first three months, every eight weeks during the remainder of the first year, and periodically thereafter (e.g., at about six-month intervals). Special attention should be given to patients who develop increased transaminase levels. Liver function tests should be repeated to confirm an elevation and subsequently monitored at more frequent intervals. If increases in AST and ALT equal or exceed three times the upper limit of normal and persist, then therapy should be discontinued. Persistence of significant aminotransferase elevations following discontinuation of therapy may warrant consideration of liver biopsy.

Active liver disease or unexplained transaminase elevations are contraindications to the use of pravastatin (see CONTRAINDICATIONS). Caution should be exercised when pravastatin is administered to patients with a history of liver disease or heavy alcohol ingestion (see CLINICAL PHARMACOLOGY: Pharmacokinetics/Metabolism). Such patients should be closely monitored, started at the lower end of the recommended dosing range, and titrated to the desired therapeutic effect.

**Skeletal Muscle: Rhabdomyolysis with renal dysfunction secondary to myoglobinuria has been reported with pravastatin and other drugs in this class.** Uncomplicated myalgia has also been reported in pravastatin-treated patients (see ADVERSE REACTIONS). Myopathy, defined as muscle aching or muscle weakness in conjunction with increases in creatine phosphokinase (CPK) values to greater than 10 times the upper limit of normal was reported to be possibly due to pravastatin in only one patient in clinical trials (<0.1%). Myopathy should be considered in any patient with diffuse myalgias, muscle tenderness or weakness, and/or marked elevation of CPK. Patients should be advised to report promptly unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever. **Pravastatin therapy should be discontinued if markedly elevated CPK levels occur or myopathy is diagnosed or suspected.** Pravastatin therapy should also be temporarily withheld in any patient experiencing an acute or serious condition predisposing to the development of renal failure secondary to rhabdomyolysis, e.g., sepsis; hypotension; major surgery; trauma; severe metabolic, endocrine, or electrolyte disorders; or uncontrolled epilepsy.

The risk of myopathy during treatment with lovastatin is increased if therapy with either cyclosporine, gemfibrozil, erythromycin, or niacin is administered concurrently. There is no experience with the use of pravastatin together with cyclosporine. Myopathy has not been observed in clinical trials involving small numbers of patients who were treated with pravastatin together with niacin. One trial of limited size involving combined therapy with pravastatin and gemfibrozil showed a trend toward more frequent CPK elevations and patient withdrawals due to musculoskeletal symptoms in the group receiving combined treatment as compared with the groups receiving placebo, gemfibrozil, or pravastatin monotherapy. Myopathy was not reported in this trial (see PRECAUTIONS: Drug Interactions). One patient developed myopathy when clofibrate was added to a previously well tolerated regimen of pravastatin; the myopathy resolved when clofibrate therapy was stopped and pravastatin treatment continued. **The use of fibrates alone may occasionally be associated with myopathy. The combined use of pravastatin and fibrates should generally be avoided.**

## **PRECAUTIONS**

**General:** Pravastatin may elevate creatine phosphokinase and transaminase levels (see ADVERSE REACTIONS). This should be considered in the differential diagnosis of chest pain in a patient on therapy with pravastatin.

**Homozygous Familial Hypercholesterolemia.** Pravastatin has not been evaluated in patients with rare homozygous familial hypercholesterolemia. In this group of patients, it has been reported that HMG-CoA reductase inhibitors are less effective because the patients lack functional LDL receptors.

**Renal Insufficiency.** A single 20 mg oral dose of pravastatin was administered to 24 patients with varying degrees of renal impairment (as determined by creatinine clearance). No effect was observed on the pharmacokinetics of pravastatin or its 3 $\alpha$ -hydroxy isomeric metabolite (SQ 31,906). A small increase was seen in mean AUC values and half-life (t<sub>1/2</sub>) for the inactive enzymatic ring hydroxylation metabolite (SQ 31,945). Given this small sample size, the dosage administered, and the degree of individual variability, patients with renal impairment who are receiving pravastatin should be closely monitored.

**Information for Patients:** Patients should be advised to report promptly unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever.

**Drug Interactions:** Immunosuppressive Drugs, Gemfibrozil, Niacin (Nicotinic Acid), Erythromycin: See WARNINGS: Skeletal Muscle.

**Antipyrine:** Clearance by the cytochrome P450 system was unaltered by concomitant administration of pravastatin. Since pravastatin does not appear to induce hepatic drug-metabolizing enzymes, it is not expected that any significant interaction of pravastatin with other drugs (e.g., phenytoin, quinidine) metabolized by the cytochrome P450 system will occur.

**Cholestyramine/Colestipol:** Concomitant administration resulted in an approximately 40 to 50% decrease in the mean AUC of pravastatin. However, when pravastatin was administered 1 hour before or 4 hours after cholestyramine or 1 hour before colestipol and a standard meal, there was no clinically significant decrease in bioavailability or therapeutic effect. (See DOSAGE AND ADMINISTRATION: Concomitant Therapy.)

**Warfarin:** In a study involving 10 healthy male subjects given pravastatin and warfarin concomitantly for 6 days, bioavailability parameters at steady state for pravastatin (parent compound) were not altered. Pravastatin did not alter the plasma protein-binding of warfarin. Concomitant dosing did increase the AUC and C<sub>max</sub> of warfarin but did not produce any changes in its anticoagulant action (i.e., no increase was seen in mean prothrombin time after 6 days of concomitant therapy). However, bleeding and extreme prolongation of prothrombin time has been reported with another drug in this class. Patients receiving warfarin-type anticoagulants should have their prothrombin times closely monitored when pravastatin is initiated or the dosage of pravastatin is changed.

**Cimetidine:** The AUC<sub>0-12h</sub> for pravastatin when given with cimetidine was not significantly different from the AUC for pravastatin when given alone. A significant difference was observed between the AUC's for pravastatin when given with cimetidine compared to when administered with antacid.

**Digoxin:** In a crossover trial involving 18 healthy male subjects given pravastatin and digoxin concurrently for 9 days, the bioavailability parameters of digoxin were not affected. The AUC of pravastatin tended to increase, but the overall bioavailability of pravastatin plus its metabolites SQ 31,906 and SQ 31,945 was not altered.

**Gemfibrozil:** In a crossover study in 10 healthy male volunteers given concomitant single doses of pravastatin and gemfibrozil, there was a significant decrease in urinary excretion and protein binding of pravastatin. In addition, there was a significant increase in AUC, C<sub>max</sub>, and T<sub>max</sub> for the pravastatin metabolite SQ 31,906. Combination therapy with pravastatin and gemfibrozil is generally not recommended.

In interaction studies with aspirin, antacids [1 hour prior to PRAVACHOL (pravastatin sodium)], cimetidine, nicotinic acid, or probucol, no statistically significant differences in bioavailability were seen when PRAVACHOL was administered.

**Other Drugs:** During clinical trials, no noticeable drug interactions were reported when PRAVACHOL was added to: diuretics, antihypertensives, digitalis, converting-enzyme inhibitors, calcium channel blockers, beta-blockers, or nitroglycerin.

**Endocrine Function:** HMG-CoA reductase inhibitors interfere with cholesterol synthesis and lower circulating cholesterol levels and, as such, might theoretically blunt adrenal or gonadal steroid hormone production. Results of clinical trials with pravastatin in males and post-menopausal females were inconsistent with regard to possible effects of the drug on basal steroid hormone levels. In a study of 21 males, the mean testosterone response to human chorionic gonadotropin was significantly reduced (p<0.004) after 16 weeks of treatment with 40 mg of pravastatin. However, the percentage of patients showing a  $\geq$ 50% rise in plasma testosterone after human chorionic gonadotropin stimulation did not change significantly after therapy in these patients. The effects of HMG-CoA reductase inhibitors on spermatogenesis and fertility have not been studied in adequate numbers of patients. The effects, if any, of pravastatin on the pituitary-gonadal axis in pre-menopausal females are unknown. Patients treated with pravastatin who display clinical evidence of endocrine dysfunction should be evaluated appropriately. Caution should also be exercised if an HMG-CoA reductase inhibitor or other agent used to lower cholesterol levels is administered to patients also receiving other drugs (e.g., ketoconazole, spironolactone, cimetidine) that may diminish the levels or activity of steroid hormones.

**CNS Toxicity:** CNS vascular lesions, characterized by perivascular hemorrhage and edema and mononuclear cell

infiltration of perivascular spaces, were seen in dogs treated with pravastatin at a dose of 25 mg/kg/day, a dose that produced a plasma drug level about 50 times higher than the mean drug level in humans taking 40 mg/day. Similar CNS vascular lesions have been observed with several other drugs in this class.

A chemically similar drug in this class produced optic nerve degeneration (Mallory-Johnson degeneration of retinogenicular fibers) in clinically normal dogs in a dose-dependent fashion starting at 60 mg/kg/day, a dose that produced mean plasma drug levels about 30 times higher than the mean drug level in humans taking the highest recommended dose (as measured by total enzyme inhibitory activity). This same drug also produced vestibulocochlear (Vestibular) nerve degeneration and retinal ganglion cell chromatolysis in dogs treated for 14 weeks at 180 mg/kg/day, a dose which resulted in a mean plasma drug level similar to that seen with the 60 mg/kg/day.

**Carcinogenesis, Mutagenesis, Impairment of Fertility:** In a 2-year study in rats fed pravastatin at doses of 10, 30, or 100 mg/kg body weight, there was an increased incidence of hepatocellular carcinomas in males at the highest dose (p<0.01). Although rats were given up to 125 times the human dose (HD) on a mg/kg body weight basis, their serum drug levels were only 6 to 10 times higher than those measured in humans given 40 mg pravastatin as measured by AUC.

The oral administration of 10, 30, or 100 mg/kg (producing plasma drug levels approximately 0.5 to 5.0 times human drug levels at 40 mg) of pravastatin to mice for 22 months resulted in a statistically significant increase in the incidence of malignant lymphomas in treated females when all treatment groups were pooled and compared to controls (p<0.05). The incidence was not dose-related and male mice were not affected.

A chemically similar drug in this class was administered to mice for 72 weeks at 25, 100, and 400 mg/kg body weight, which resulted in mean serum drug levels approximately 3, 15, and 33 times higher than the mean human serum drug concentration (as total inhibitory activity) after a 40 mg oral dose. Liver carcinomas were significantly increased in high-dose females and mid- and high-dose males, with a maximum incidence of 90 percent in males. The incidence of adenomas of the liver was significantly increased in mid- and high-dose females. Drug treatment also significantly increased the incidence of lung adenomas in mid- and high-dose males and females. Adenomas of the eye Harderian gland (a gland of the eye of rodents) were significantly higher in high-dose mice than in controls.

No evidence of mutagenicity was observed *in vitro*, with or without rat-liver metabolic activation, in the following studies: microbial mutagen tests, using mutant strains of *Salmonella typhimurium* or *Escherichia coli*, a forward mutation assay in L5178Y TK +/– mouse lymphoma cells, a chromosomal aberration test in hamster cells, and a gene conversion assay using *Saccharomyces cerevisiae*. In addition, there was no evidence of mutagenicity in either a dominant lethal test in mice or a micronucleus test in mice.

In a study in rats, with daily doses up to 500 mg/kg, pravastatin did not produce any adverse effects on fertility or general reproductive performance. However, in a study with another HMG-CoA reductase inhibitor, there was decreased fertility in male rats treated for 34 weeks at 25 mg/kg body weight, although this effect was not observed in a subsequent fertility study when this same dose was administered for 11 weeks (the entire cycle of spermatogenesis, including epididymal maturation). In rats treated with this same reductase inhibitor at 180 mg/kg/day, seminiferous tubule degeneration (necrosis and loss of spermatogenic epithelium) was observed. Although not seen with pravastatin, two similar drugs in this class caused drug-related testicular atrophy, decreased spermatogenesis, spermatocytic degeneration, and giant cell formation in dogs. The clinical significance of these findings is unclear.

**Pregnancy: Pregnancy Category X:** See CONTRAINDICATIONS.

Safety in pregnant women has not been established. Pravastatin was not teratogenic in rats at doses up to 1000 mg/kg daily or in rabbits at doses of up to 50 mg/kg daily. These doses resulted in 20x (rabbit) or 240x (rat) the human exposure based on surface area (mg/meter<sup>2</sup>). However, in studies with another HMG-CoA reductase inhibitor, skeletal malformations were observed in rats and mice. PRAVACHOL (pravastatin sodium) should be administered to women of child-bearing potential only when such patients are highly unlikely to conceive and have been informed of the potential hazards. If the woman becomes pregnant while taking PRAVACHOL, it should be discontinued and the patient advised again as to the potential hazards to the fetus.

**Nursing Mothers:** A small amount of pravastatin is excreted in human breast milk. Because of the potential for serious adverse reactions in nursing infants, women taking PRAVACHOL should not nurse (see CONTRAINDICATIONS).

**Pediatric Use:** Safety and effectiveness in individuals less than 18 years old have not been established. Hence, treatment in patients less than 18 years old is not recommended at this time. (See also PRECAUTIONS: General.)

## **ADVERSE REACTIONS**

Pravastatin is generally well tolerated; adverse reactions have usually been mild and transient. In 4-month long placebo-controlled trials, 1.7% of pravastatin-treated patients and 1.2% of placebo-treated patients were discontinued from treatment because of adverse experiences attributed to study drug therapy; this difference was not statistically significant. In long-term studies, the most common reasons for discontinuation were asymptomatic serum transaminase increases and mild, non-specific gastrointestinal complaints. During clinical trials the overall incidence of adverse events in the elderly was not different from the incidence observed in younger patients.

**Adverse Clinical Events:** All adverse clinical events (regardless of attribution) reported in more than 2% of pravastatin-treated patients in the placebo-controlled trials are identified in the table below; also shown are the percentages of patients in whom these medical events were believed to be related or possibly related to the drug:

Body System/Event	All Events %		Events Attributed to Study Drug %	
	Pravastatin (N = 900)	Placebo (N = 411)	Pravastatin (N = 900)	Placebo (N = 411)
Cardiovascular				
Cardiac Chest Pain	4.0	3.4	0.1	0.0
Dermatologic				
Rash	4.0*	1.1	1.3	0.9
Gastrointestinal				
Nausea/Vomiting	7.3	7.1	2.9	3.4
Diarrhea	6.2	5.6	2.0	1.9
Abdominal Pain	5.4	6.9	2.0	3.9
Constipation	4.0	7.1	2.4	5.1
Flatulence	3.3	3.6	2.7	3.4
Heartburn	2.9	1.9	2.0	0.7
General				
Fatigue	3.8	3.4	1.9	1.0
Chest Pain	3.7	1.9	0.3	0.2
Influenza	2.4*	0.7	0.0	0.0
Musculoskeletal				
Localized Pain	10.0	9.0	1.6	1.5
Myalgia	2.7	1.0	0.4	0.0
Nervous System				
Headache	6.2	3.9	1.7*	0.2
Dizziness	3.3	3.2	1.0	0.5
Renal/Genitourinary				
Urinary Abnormality	2.4	2.9	0.7	1.2
Respiratory				
Common Cold	7.0	6.3	0.0	0.0
Rhinitis	4.0	4.1	0.1	0.0
Cough	2.6	1.7	0.1	0.0

\*Statistically significantly different from placebo.

The following events have been reported with drugs in this class:

**Skeletal:** myopathy, rhabdomyolysis.

**Neurological:** dysfunction of certain cranial nerves (including alteration of taste, impairment of extra-ocular movement, facial paralysis), tremor, vertigo, memory loss, paresthesia, peripheral neuropathy, peripheral nerve palsy.

**Hypersensitivity Reactions:** An apparent hypersensitivity syndrome has been reported rarely which has included one or more of the following features: anaphylaxis, angioedema, lupus erythematosus-like syndrome, polymyalgia rheumatica, vasculitis, purpura, thrombocytopenia, leukopenia, hemolytic anemia, positive ANA, ESR increase, arthritis, arthralgia, urticaria, asthenia, photosensitivity, fever, chills, flushing, malaise, dyspnea, toxic epidermal necrolysis, erythema multiforme, including Stevens-Johnson syndrome.

**Gastrointestinal:** pancreatitis, hepatitis, including chronic active hepatitis, cholestatic jaundice, fatty change in liver, and, rarely, cirrhosis, fulminant hepatic necrosis, and hepatoma; anorexia, vomiting.

**Reproductive:** gynecostasia, loss of libido, erectile dysfunction.

**Eye:** progression of cataracts (lens opacities), ophthalmoplegia.

**Laboratory Test Abnormalities:** Increases in serum transaminase (ALT, AST) values and CPK have been observed (see WARNINGS).

Transient, asymptomatic eosinophilia has been reported. Eosinophils usually returned to normal despite continued therapy. Anemia, thrombocytopenia, and leukopenia have been reported with other HMG-CoA reductase inhibitors.

**Concomitant Therapy:** Pravastatin has been administered concurrently with cholestyramine, colestipol, nicotinic acid, probucol and gemfibrozil. Preliminary data suggest that the addition of either probucol or gemfibrozil to therapy with lovastatin or pravastatin is **not** associated with greater reduction in LDL-cholesterol than that achieved with lovastatin or pravastatin alone. No adverse reactions unique to the combination or in addition to those previously reported for each drug alone have been reported. Myopathy and rhabdomyolysis (with or without acute renal failure) have been reported when another HMG-CoA reductase inhibitor was used in combination with immunosuppressive drugs, gemfibrozil, erythromycin, or lipid-lowering doses of nicotinic acid. Concomitant therapy with HMG-CoA reductase inhibitors and these agents is generally not recommended. (See WARNINGS: Skeletal Muscle and PRECAUTIONS: Drug Interactions.)

## **OVERDOSAGE**

There have been no reports of overdoses with pravastatin.

Should an accidental overdose occur, treat symptomatically and institute supportive measures as required.



THE PRAVACHOL® DIRECTION  
IN LIPID MANAGEMENT

Effective lipid management  
doesn't have to be tough



- Improves key lipids — significant reduction in LDL-C<sup>1</sup>
- Excellent safety profile
- Easy for patients — once-daily dosing, well tolerated
- Usual dose: 20 mg once daily at bedtime, with or without food

  
**PRAVACHOL®**  
pravastatin sodium 20 mg tablets

PRAVACHOL is indicated as an adjunct to diet for the reduction of elevated total and LDL-cholesterol levels in patients with primary hypercholesterolemia (Types IIa and IIb) when the response to diet alone has not been adequate.

Active liver disease or unexplained transaminase elevations, pregnancy and lactation are contraindications to the use of pravastatin sodium.

Please see CONTRAINDICATIONS, WARNINGS, PRECAUTIONS, and ADVERSE REACTIONS in the brief summary of prescribing information on the adjacent page.



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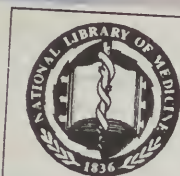
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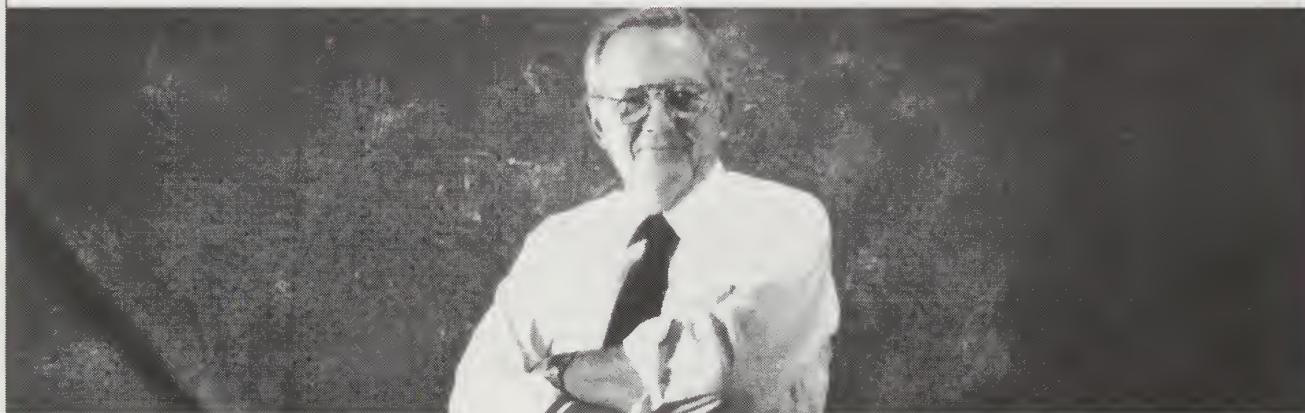
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SAY THEY'RE COMMITTED TO PHYSICIANS..."



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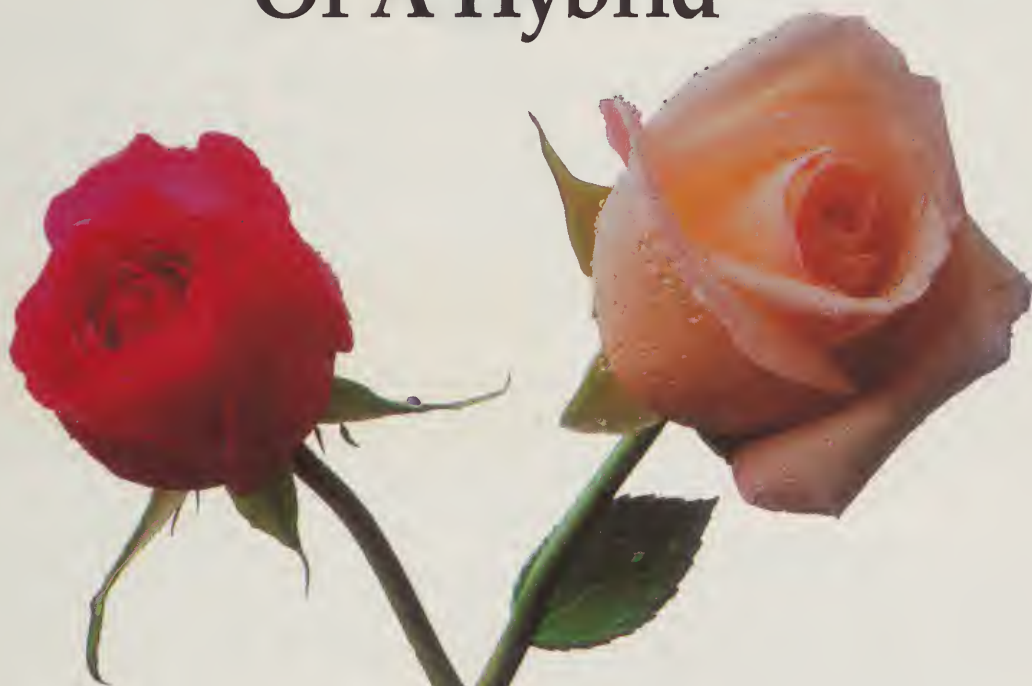
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# Discover The Elegance Of A Hybrid



At first glance, it's the *beauty* of a rose that catches the eye. The vibrant color. The delicately shaped petals. But study it more closely, and its *elegance* becomes apparent—a gentle blend of softness and strength.

At first glance, it's the *enhanced performance* of Vaseretic that catches the eye. But study Vaseretic more closely, and its *elegance* becomes apparent. The way its one-tablet, once-a-day dosage minimizes multiple

medications. Minimizes insurance copayments. And minimizes potassium supplementation.

A hybrid *blending of tolerability and power* that's available for the right patient. Vaseretic is indicated for the treatment of hypertension in patients for whom combination therapy is appropriate.

And an elegant discovery for your practice.

**USE IN PREGNANCY:** When used in pregnancy during the second and third trimesters, ACE inhibitors can cause injury and even death to the developing fetus. When pregnancy is detected, Vaseretic® (Enalapril Maleate-Hydrochlorothiazide) should be discontinued as soon as possible. See WARNINGS, Fetal/Neonatal Morbidity and Mortality.

**VASERETIC® 10-25**  
Enalapril Maleate-Hydrochlorothiazide

*Next*

Dosage must be individualized; the fixed combination is not for initial therapy.

Evaluation of the hypertensive patient should always include assessment of renal function.

For a Brief Summary of Prescribing Information, see adjacent pages.



**TABLETS  
VASERETIC®  
(ENALAPRIL MALEATE-HYDROCHLOROTHIAZIDE)**

**USE IN PREGNANCY:** When used in pregnancy during the second and third trimesters, ACE inhibitors can cause injury and even death to the developing fetus. When pregnancy is detected, VASERETIC (Enalapril Maleate-Hydrochlorothiazide) should be discontinued as soon as possible. See WARNINGS, Fetal/Neonatal Morbidity and Mortality.

**CONTRAINDICATIONS:** VASERETIC is contraindicated in patients who are hypersensitive to any component of this product and in patients with a history of angioedema related to previous treatment with an angiotensin converting enzyme inhibitor. Because of the hydrochlorothiazide component, this product is contraindicated in patients with anuria or hypersensitivity to other sulfonamide-derived drugs.

**WARNINGS:** General; Enalapril Maleate; Hypotension: Excessive hypotension was rarely seen in uncomplicated hypertensive patients but is a possible consequence of enalapril use in severely salt/volume depleted persons such as those treated vigorously with diuretics or patients on dialysis.

Syncope has been reported in 1.3 percent of patients receiving VASERETIC. In patients receiving enalapril alone, the incidence of syncope is 0.5 percent. The overall incidence of syncope may be reduced by proper titration of the individual components. (See PRECAUTIONS, Drug Interactions, and ADVERSE REACTIONS.)

In patients with severe congestive heart failure, with or without associated renal insufficiency, excessive hypotension has been observed and may be associated with oliguria and/or progressive azotemia, and rarely with acute renal failure and/or death. Because of the potential fall in blood pressure in these patients, therapy should be started under very close medical supervision. Such patients should be followed closely for the first two weeks of treatment and whenever the dose of enalapril and/or diuretic is increased. Similar considerations may apply to patients with ischemic heart or cerebrovascular disease, in whom an excessive fall in blood pressure could result in a myocardial infarction or cerebrovascular accident.

If hypotension occurs, the patient should be placed in the supine position and, if necessary, receive an intravenous infusion of normal saline. A transient hypotensive response is not a contraindication to further doses, which usually can be given without difficulty once the blood pressure has increased after volume expansion.

**Angioedema:** Angioedema of the face, extremities, lips, tongue, glottis and/or larynx has been reported in patients treated with angiotensin converting enzyme inhibitors, including enalapril. In such cases VASERETIC should be promptly discontinued and appropriate therapy and monitoring should be provided until complete and sustained resolution of signs and symptoms has occurred. In instances where swelling has been confined to the face and lips the condition has generally resolved without treatment, although antihistamines have been useful in relieving symptoms. Angioedema associated with laryngeal edema may be fatal. Where there is involvement of the tongue, glottis or larynx, likely to cause airway obstruction, appropriate therapy, e.g., subcutaneous epinephrine solution 1:1000 (0.3 mL to 0.5 mL) and/or measures necessary to ensure a patent airway, should be promptly provided. (See ADVERSE REACTIONS.)

Patients with a history of angioedema unrelated to ACE inhibitor therapy may be at increased risk of angioedema while receiving an ACE inhibitor (see also CONTRAINDICATIONS).

**Neutropenia/Agranulocytosis:** Another angiotensin converting enzyme inhibitor, captopril, has been shown to cause agranulocytosis and bone marrow depression, rarely in uncomplicated patients but more frequently in patients with renal impairment especially if they also have a collagen vascular disease. Available data from clinical trials of enalapril are insufficient to show that enalapril does not cause agranulocytosis at similar rates. Marketing experience has revealed several cases of neutropenia or agranulocytosis in which a causal relationship to enalapril cannot be excluded. Periodic monitoring of white blood cell counts in patients with collagen vascular disease and renal disease should be considered.

**Hydrochlorothiazide:** Thiazides should be used with caution in severe renal disease. In patients with renal disease, thiazides may precipitate azotemia. Cumulative effects of the drug may develop in patients with impaired renal function.

Thiazides should be used with caution in patients with impaired hepatic function or progressive liver disease, since minor alterations of fluid and electrolyte balance may precipitate hepatic coma.

Sensitivity reactions may occur in patients with or without a history of allergy or bronchial asthma.

The possibility of exacerbation or activation of systemic lupus erythematosus has been reported.

Lithium generally should not be given with thiazides (see PRECAUTIONS, Drug Interactions, Enalapril Maleate and Hydrochlorothiazide).

**Pregnancy:** Enalapril-Hydrochlorothiazide: There was no teratogenicity in rats given up to 90 mg/kg/day of enalapril (150 times the maximum human dose) in combination with 10 mg/kg/day of hydrochlorothiazide (2 1/2 times the maximum human dose) or in mice given up to 30 mg/kg/day of enalapril (50 times the maximum human dose) in combination with 10 mg/kg/day of hydrochlorothiazide (2 1/2 times the maximum human dose). At these doses, fetotoxicity expressed as a decrease in average fetal weight occurred in both species. No fetotoxicity occurred at lower doses; 30/10 mg/kg/day of enalapril-hydrochlorothiazide in rats and 10/10 mg/kg/day of enalapril-hydrochlorothiazide in mice.

When used in pregnancy during the second and third trimesters, ACE inhibitors can cause injury and even death to the developing fetus. When pregnancy is detected, VASERETIC should be discontinued as soon as possible. (See Enalapril Maleate, Fetal/Neonatal Morbidity and Mortality, below.)

**Enalapril Maleate; Fetal/Neonatal Morbidity and Mortality:** ACE inhibitors can cause fetal and neonatal morbidity and death when administered to pregnant women. Several dozen cases have been reported in the world literature. When pregnancy is detected, ACE inhibitors should be discontinued as soon as possible.

The use of ACE inhibitors during the second and third trimesters of pregnancy has been associated with fetal and neonatal injury, including hypotension, neonatal skull hypoplasia, anuria, reversible or irreversible renal failure, and death. Oligohydramnios has also been reported, presumably resulting from decreased fetal renal function; oligohydramnios in this setting has been associated with fetal limb contractures, craniofacial deformation, and hypoplastic lung development. Prematurity, intrauterine growth retardation, and patent ductus arteriosus have also been reported, although it is not clear whether these occurrences were due to the ACE-inhibitor exposure.

These adverse effects do not appear to have resulted from intrauterine ACE-inhibitor exposure that has been limited to the first trimester. Mothers whose embryos and fetuses are exposed to ACE inhibitors only during the first trimester should be so informed. Nonetheless, when patients become pregnant, physicians should make every effort to discontinue the use of VASERETIC as soon as possible.

Rarely (probably less often than once in every thousand pregnancies), no

10  
mg

25  
mg

alternative to ACE inhibitors will be found. In these rare cases, the mothers should be apprised of the potential hazards to their fetuses, and serial ultrasound examinations should be performed to assess the intraamniotic environment.

If oligohydramnios is observed, VASERETIC should be discontinued unless it is considered lifesaving for the mother. Contraction stress testing (CST), a non-stress test (NST), or biophysical profiling (BPP) may be appropriate, depending upon the week of pregnancy. Patients and physicians should be aware, however, that oligohydramnios may not appear until after the fetus has sustained irreversible injury.

Infants with histories of *in utero* exposure to ACE inhibitors should be closely observed for hypotension, oliguria, and hyperkalemia. If oliguria occurs, attention should be directed toward support of blood pressure and renal perfusion. Exchange transfusion or dialysis may be required as means of reversing hypotension and/or substituting for disordered renal function. Enalapril, which crosses the placenta, has been removed from neonatal circulation by peritoneal dialysis with some clinical benefit, and theoretically may be removed by exchange transfusion, although there is no experience with the latter procedure.

No teratogenic effects of enalapril were seen in studies of pregnant rats, and rabbits. On a mg/kg basis, the doses used were up to 333 times (in rats), and 50 times (in rabbits) the maximum recommended human dose.

**Hydrochlorothiazide; Teratogenic Effects:** Reproduction studies in the rabbit, the mouse and the rat at doses up to 100 mg/kg/day (50 times the human dose) showed no evidence of external abnormalities of the fetus due to hydrochlorothiazide. Hydrochlorothiazide given in a two-litter study in rats at doses of 4 - 5.6 mg/kg (approximately 1 - 2 times the usual daily human dose) did not impair fertility or produce birth abnormalities in the offspring. Thiazides cross the placental barrier and appear in cord blood.

**Nonteratogenic Effects:** These may include fetal and neonatal jaundice, thrombocytopenia, and possibly other adverse reactions which have occurred in the adult.

**PRECAUTIONS:** General; Enalapril Maleate; Impaired Renal Function: As a consequence of inhibiting the renin-angiotensin-aldosterone system, changes in renal function may be anticipated in susceptible individuals. In patients with severe congestive heart failure whose renal function may depend on the activity of the renin-angiotensin-aldosterone system, treatment with angiotensin converting enzyme inhibitors, including enalapril, may be associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death.

In clinical studies in hypertensive patients with unilateral or bilateral renal artery stenosis, increases in blood urea nitrogen and serum creatinine were observed in 20 percent of patients. These increases were almost always reversible upon discontinuation of enalapril and/or diuretic therapy. In such patients renal function should be monitored during the first few weeks of therapy.

Some patients with hypertension or heart failure with no apparent pre-existing renal vascular disease have developed increases in blood urea and serum creatinine, usually minor and transient, especially when enalapril has been given concomitantly with a diuretic. This is more likely to occur in patients with pre-existing renal impairment. Dosage reduction of enalapril and/or discontinuation of the diuretic may be required.

Evaluation of the hypertensive patient should always include assessment of renal function.

**Hemodialysis Patients:** Anaphylactoid reactions have been reported in patients dialyzed with high-flux membranes (e.g., AN 69®) and treated concomitantly with an ACE inhibitor. In these patients consideration should be given to using a different type of dialysis membrane or a different class of antihypertensive agent.

**Hyperkalemia:** Elevated serum potassium (greater than 5.7 mEq/L) was observed in approximately one percent of hypertensive patients in clinical trials treated with enalapril alone. In most cases these were isolated values which resolved despite continued therapy, although hyperkalemia was a cause of discontinuation of therapy in 0.28 percent of hypertensive patients. Hyperkalemia was less frequent (approximately 0.1 percent) in patients treated with enalapril plus hydrochlorothiazide. Risk factors for the development of hyperkalemia include renal insufficiency, diabetes mellitus, and the concomitant use of potassium-sparing diuretics, potassium supplements and/or potassium-containing salt substitutes, which should be used cautiously, if at all, with enalapril. (See Drug Interactions.)

**Cough:** Cough has been reported with the use of ACE inhibitors. Characteristically, the cough is nonproductive, persistent and resolves after discontinuation of therapy. ACE inhibitor-induced cough should be considered as part of the differential diagnosis of cough.

**Surgery/Anesthesia:** In patients undergoing major surgery or during anesthesia with agents that produce hypotension, enalapril may block angiotensin II formation secondary to compensatory renin release. If hypotension occurs and is considered to be due to this mechanism, it can be corrected by volume expansion.

**Hydrochlorothiazide:** Periodic determination of serum electrolytes to detect possible electrolyte imbalance should be performed at appropriate intervals. All patients receiving thiazide therapy should be observed for clinical signs of fluid or electrolyte imbalance: hypotension, hyponatremia, hypochloremic alkalosis and hypokalemia. Serum and urine electrolyte determinations are particularly important when the patient is vomiting excessively or receiving parenteral fluids. Warning signs or symptoms of fluid and electrolyte imbalance, irrespective of cause, include dryness of mouth, thirst, weakness, lethargy, drowsiness, restlessness, confusion, seizures, muscle pains or cramps, muscular fatigue, hypotension, oliguria, tachycardia, and gastrointestinal disturbances such as nausea and vomiting.

Hypokalemia may develop, especially with brisk diuresis, when severe cirrhosis is present, or after prolonged therapy. Interference with adequate oral electrolyte intake will also contribute to hypokalemia. Hypokalemia may cause cardiac arrhythmia and may also sensitize or exaggerate the response of the heart to the toxic effects of digitalis (e.g., increased ventricular irritability). Because enalapril reduces the production of aldosterone, concomitant therapy with enalapril attenuates the diuretic-induced potassium loss (see Drug Interactions, Agents Increasing Serum Potassium).

Although any chloride deficit is generally mild and usually does not require specific treatment except under extraordinary circumstances (as in liver disease or renal disease), chloride replacement may be required in the

treatment of metabolic alkalosis.

Dilutional hyponatremia may occur in edematous patients in hot weather; appropriate therapy is water restriction, rather than administration of salt except in rare instances when the hyponatremia is life-threatening. In actual salt depletion, appropriate replacement is the therapy of choice.

Hyperuricemia may occur or frank gout may be precipitated in certain patients receiving thiazide therapy.

In diabetic patients dosage adjustments of insulin or oral hypoglycemic agents may be required. Hyperglycemia may occur with thiazide diuretics. Thus latent diabetes mellitus may become manifest during thiazide therapy.

The antihypertensive effects of the drug may be enhanced in the postsympathectomy patient.

If progressive renal impairment becomes evident consider withholding or discontinuing diuretic therapy.

Thiazides have been shown to increase the urinary excretion of magnesium; this may result in hypomagnesemia.

Thiazides may decrease urinary calcium excretion. Thiazides may cause intermittent and slight elevation of serum calcium in the absence of known disorders of calcium metabolism. Marked hypercalcemia may be evidence of hidden hyperparathyroidism. Thiazides should be discontinued before carrying out tests for parathyroid function.

Increases in cholesterol and triglyceride levels may be associated with thiazide diuretic therapy.

**Information for Patients; Angioedema:** Angioedema, including laryngeal edema, may occur especially following the first dose of enalapril. Patients should be so advised and told to report immediately any signs or symptoms suggesting angioedema (swelling of face, extremities, eyes, lips, tongue, difficulty in swallowing or breathing) and to take no more drug until they have consulted with the prescribing physician.

**Hypotension:** Patients should be cautioned to report lightheadedness especially during the first few days of therapy. If actual syncope occurs, the patients should be told to discontinue the drug until they have consulted with the prescribing physician.

All patients should be cautioned that excessive perspiration and dehydration may lead to an excessive fall in blood pressure because of reduction in fluid volume. Other causes of volume depletion such as vomiting or diarrhea may also lead to a fall in blood pressure; patients should be advised to consult with the physician.

**Hyperkalemia:** Patients should be told not to use salt substitutes containing potassium without consulting their physician.

**Neutropenia:** Patients should be told to report promptly any indication of infection (e.g., sore throat, fever) which may be a sign of neutropenia.

**Pregnancy:** Female patients of childbearing age should be told about the consequences of second- and third-trimester exposure to ACE inhibitors, and they should also be told that these consequences do not appear to have resulted from intrauterine ACE-inhibitor exposure that has been limited to the first trimester. These patients should be asked to report pregnancies to their physicians as soon as possible.

**NOTE:** As with many other drugs, certain advice to patients being treated with VASERETIC is warranted. This information is intended to aid in the safe and effective use of this medication. It is not a disclosure of all possible adverse or intended effects.

**Drug Interactions:** Enalapril Maleate; Hypotension—Patients on Diuretic Therapy: Patients on diuretics and especially those in whom diuretic therapy was recently instituted, may occasionally experience an excessive reduction of blood pressure after initiation of therapy with enalapril. The possibility of hypotensive effects with enalapril can be minimized by either discontinuing the diuretic or increasing the salt intake prior to initiation of treatment with enalapril. If it is necessary to continue the diuretic, provide medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS.)

**Agents Causing Renin Release:** The antihypertensive effect of enalapril is augmented by renin-potentiating agents that cause renin release (e.g., diuretics).

**Other Cardiovascular Agents:** Enalapril has been used concomitantly with beta adrenergic-blocking agents, methylglucosides, calcium-channel-blocking agents, hydralazine and prazosin without evidence of clinically significant adverse interactions.

**Agents Increasing Serum Potassium:** Enalapril attenuates diuretic-induced potassium loss. Potassium-sparing diuretics (e.g., spironolactone, triamterene, or amiloride), potassium supplements, or potassium-containing salt substitutes may lead to significant increases in serum potassium. Therefore, if concomitant use of these agents is indicated because of demonstrated hypokalemia they should be used with caution and with frequent monitoring of serum potassium.

**Lithium:** Lithium toxicity has been reported in patients receiving lithium concomitantly with drugs which cause elimination of sodium, including ACE inhibitors. A few cases of lithium toxicity have been reported in patients receiving concomitant enalapril and lithium and were reversible upon discontinuation of both drugs. It is recommended that serum lithium levels be monitored frequently if enalapril is administered concomitantly with lithium. Hydrochlorothiazide: When administered concurrently the following drugs may interact with thiazide diuretics:

**Alcohol, barbiturates, or narcotics:** potentiation of orthostatic hypotension may occur.

**Antidiabetic drugs (oral agents and insulin):**—dosage adjustment of the antidiabetic drug may be required.

**Other antihypertensive drugs:**—additive effect or potentiation.

**Cholestyramine and colestipol resins:**—Cholestyramine and colestipol resins bind the hydrochlorothiazide and reduce its absorption from the gastrointestinal tract by up to 85 and 43 percent, respectively. Thiazides may be administered two to four hours before the resin when the two drugs are used concomitantly.

**Corticosteroids, ACTH:**—intensified electrolyte depletion, particularly hypokalemia.

**Pressor amines (e.g., norepinephrine):**—possible decreased response to pressor amines but not sufficient to preclude their use.

**Skeletal muscle relaxants, nondepolarizing (e.g., tubocurarine):**—possible increased responsiveness to the muscle relaxant.

**Lithium:**—should not generally be given with diuretics. Diuretic agents reduce the renal clearance of lithium and add a high risk of lithium toxicity. Refer to the package insert for lithium preparations before use of such preparations with VASERETIC.

**Non-steroidal Anti-inflammatory Drugs:**—In some patients, the administration of a non-steroidal anti-inflammatory agent can reduce the diuretic, natriuretic, and antihypertensive effects of loop, potassium-sparing and thiazide diuretics. Therefore, when VASERETIC and non-steroidal anti-inflammatory agents are used concomitantly, the patient should be observed closely to determine if the desired effect of the diuretic is obtained.

**Carcinogenesis, Mutagenesis, Impairment of Fertility:** Enalapril in combination with hydrochlorothiazide was not mutagenic in the Ames microbial mutagen test with or without metabolic activation. Enalapril-hydrochlorothiazide did not produce DNA single strand breaks in an *in vitro* alkaline elution assay in rat hepatocytes or chromosomal aberrations in an *in vitro* mouse



bone marrow assay.

**Enalapril Maleate:** There was no evidence of a tumorigenic effect when enalapril was administered for 106 weeks to rats at doses up to 90 mg/kg/day (150 times\* the maximum daily human dose). Enalapril has also been administered for 94 weeks to male and female mice at doses up to 90 and 180 mg/kg/day, respectively, (150 and 300 times\* the maximum daily dose for humans) and showed no evidence of carcinogenicity.

Neither enalapril maleate nor the active diacid was mutagenic in the Ames microbial mutagen test with or without metabolic activation. Enalapril was also negative in the following genotoxicity studies: rec-assay, reverse mutation assay with *E. coli*, sister chromatid exchange with cultured mammalian cells, and the micronucleus test with mice, as well as in an *in vivo* cytogenetic study using mouse bone marrow.

There were no adverse effects on reproductive performance in male and female rats treated with 10 to 90 mg/kg/day of enalapril.

**Hydrochlorothiazide:** Two-year feeding studies in mice and rats conducted under the auspices of the National Toxicology Program (NTP) uncovered no evidence of a carcinogenic potential of hydrochlorothiazide in female mice (at doses of up to approximately 600 mg/kg/day) or in male and female rats (at doses of up to approximately 100 mg/kg/day). The NTP, however, found equivocal evidence for hepatocarcinogenicity in male mice.

Hydrochlorothiazide was not genotoxic *in vitro* in the Ames mutagenicity assay of *Salmonella typhimurium* strains TA 98, TA 100, TA 1535, TA 1537, and TA 1538 and in the Chinese Hamster Ovary (CHO) test for chromosomal aberrations, or *in vivo* in assays using mouse germinal cell chromosomes, Chinese hamster bone marrow chromosomes, and the *Drosophila* sex-linked recessive lethal trait gene. Positive test results were obtained only in the *in vitro* CHO Sister Chromatid Exchange (clastogenicity) and in the Mouse Lymphoma Cell (mutagenicity) assays, using concentrations of hydrochlorothiazide from 43 to 1300 µg/mL, and in the *Aspergillus nidulans* non-disjunction assay at an unspecified concentration.

Hydrochlorothiazide had no adverse effects on the fertility of mice and rats of either sex in studies wherein these species were exposed, via their diet, to doses of up to 100 and 4 mg/kg, respectively, prior to conception and throughout gestation.

**Pregnancy; Pregnancy Categories C (first trimester) and D (second and third trimesters).** See WARNINGS, Pregnancy, Enalapril Maleate, Fetal/Neonatal Morbidity and Mortality.

**Nursing Mothers:** Enalapril and enalaprilat are detected in human milk in trace amounts. Thiazides do appear in human milk. Because of the potential for serious reactions in nursing infants from either drug, a decision should be made whether to discontinue nursing or to discontinue VASERETIC, taking into account the importance of the drug to the mother.

**Pediatric Use:** Safety and effectiveness in children have not been established.

**ADVERSE REACTIONS:** VASERETIC has been evaluated for safety in more than 1500 patients, including over 300 patients treated for one year or more. In clinical trials with VASERETIC no adverse experiences peculiar to this combination drug have been observed. Adverse experiences that have occurred, have been limited to those that have been previously reported with enalapril or hydrochlorothiazide.

The most frequent clinical adverse experiences in controlled trials were: dizziness (8.6 percent), headache (5.5 percent), fatigue (3.9 percent) and cough (3.5 percent). Adverse experiences occurring in greater than two percent of patients treated with VASERETIC in controlled clinical trials were: muscle cramps (2.7 percent), nausea (2.5 percent), asthenia (2.4 percent), orthostatic effects (2.3 percent), impotence (2.2 percent), and diarrhea (2.1 percent).

Clinical adverse experiences occurring in 0.5 to 2.0 percent of patients in controlled trials included: *Body As A Whole:* Syncope, chest pain, abdominal pain; *Cardiovascular:* Orthostatic hypotension, palpitation, tachycardia; *Digestive:* Vomiting, dyspepsia, constipation, flatulence, dry mouth; *Nervous/Psychiatric:* Insomnia, nervousness, paresthesia, somnolence, vertigo; *Skin:* Pruritus, rash; *Other:* Dyspnea, gout, back pain, arthralgia, diaphoresis, decreased libido, tinnitus, urinary tract infection.

**Angioedema:** Angioedema has been reported in patients receiving VASERETIC (0.6 percent). Angioedema associated with laryngeal edema may be fatal. If angioedema of the face, extremities, lips, tongue, glottis and/or larynx occurs, treatment with VASERETIC should be discontinued and appropriate therapy instituted immediately. (See WARNINGS.)

**Hypotension:** In clinical trials, adverse effects relating to hypotension occurred as follows: hypotension (0.9 percent), orthostatic hypotension (1.5 percent), other orthostatic effects (2.3 percent). In addition syncope occurred in 1.3 percent of patients. (See WARNINGS.)

**Cough:** See PRECAUTIONS, Cough.

**Clinical Laboratory Test Findings: Serum Electrolytes:** See PRECAUTIONS.

**Creatinine, Blood Urea Nitrogen:** In controlled clinical trials minor increases in blood urea nitrogen and serum creatinine, reversible upon discontinuation of therapy, were observed in about 0.6 percent of patients with essential hypertension treated with VASERETIC. More marked increases have been reported in other enalapril experience. Increases are more likely to occur in patients with renal artery stenosis. (See PRECAUTIONS.)

**Serum Uric Acid, Glucose, Magnesium, and Calcium:** See PRECAUTIONS.

**Hemoglobin and Hematocrit:** Small decreases in hemoglobin and hematocrit (mean decreases of approximately 0.3 g percent and 1.0 vl percent, respectively) occur frequently in hypertensive patients treated with VASERETIC but are rarely of clinical importance unless another cause of anemia coexists. In clinical trials, less than 0.1 percent of patients discontinued therapy due to anemia.

**Liver Function Tests:** Rarely, elevations of liver enzymes and/or serum bilirubin have occurred.

Other adverse reactions that have been reported with the individual components are listed below and, within each category, are in order of decreasing severity.

**Enalapril Maleate—Enalapril** has been evaluated for safety in more than 10,000 patients. In clinical trials adverse reactions which occurred with enalapril were also seen with VASERETIC. However, since enalapril has been marketed, the following adverse reactions have been reported: *Body As A Whole:* Anaphylactoid reactions (see PRECAUTIONS, Hemodialysis Patients); *Cardiovascular:* Cardiac arrest; myocardial infarction or cerebrovascular accident, possibly secondary to excessive hypotension in high risk patients (see WARNINGS, Hypotension); pulmonary embolism and infarction; pulmonary edema; rhythm disturbances including atrial tachycardia and bradycardia; atrial fibrillation; hypotension; angina pectoris; *Digestive:* Ileus, pancreatitis, hepatic failure, hepatitis (hepatocellular [proven on rechallenge] or cholestatic jaundice), melena, anorexia, glossitis, stomatitis, dry mouth; *Hematologic:* Rare cases of neutropenia, thrombocytopenia and bone marrow depression, a few cases of hemolysis in patients with G-6-PD deficiency have been reported in which a causal relationship to enalapril cannot be excluded; *Nervous System/Psychiatric:* Depression, confusion, ataxia, peripheral neuropathy (e.g., paresthesia, dysesthesia); *Urogenital:* Renal failure, oliguria, renal dysfunction (see PRECAUTIONS), flank pain, gynecomastia; *Respiratory:* Pulmonary infiltrates, bronchospasm, pneumonia, bronchitis, rhinorrhea, sore throat and hoarseness, asthma, upper respiratory infection; *Skin:* Exfoliative dermatitis, toxic epidermal necrolysis, Stevens-Johnson syndrome, herpes zoster, erythema multiforme, urticaria, alopecia, flushing, photosensitivity; *Special Senses:* Blurred vision, taste alteration, anosmia, conjunctivitis, dry eyes, tearing.

**Miscellaneous:** A symptom complex has been reported which may include a positive ANA, an elevated erythrocyte sedimentation rate, arthralgia/arthritis, myalgia, fever, serositis, vasculitis, leukocytosis, eosinophilia, photosensitivity, rash and other dermatologic manifestations.

**Fetal/Neonatal Morbidity and Mortality:** See WARNINGS, Pregnancy, Enalapril Maleate, Fetal/Neonatal Morbidity and Mortality.

**Hydrochlorothiazide—Body as a Whole:** Weakness; *Digestive:* Pancreatitis, jaundice (intrahepatic cholestatic jaundice), sialadenitis, cramping, gastric irritation, anorexia; *Hematologic:* Aplastic anemia, agranulocytosis, leukopenia, hemolytic anemia, thrombocytopenia; *Hypersensitivity:* Purpura, photosensitization, urticaria, necrotizing angitis (vasculitis and cutaneous vasculitis), fever, respiratory distress including pneumonitis and pulmonary edema, anaphylactic reactions; *Musculoskeletal:* Muscle spasm; *Nervous System/Psychiatric:* Restlessness; *Renal:* Renal failure, renal dysfunction, interstitial nephritis (see WARNINGS); *Skin:* Erythema multiforme including Stevens-Johnson syndrome, exfoliative dermatitis including toxic epidermal necrolysis, alopecia; *Special Senses:* Transient blurred vision, xanthopsia.

\* Based on patient weight of 50 kg.

For more detailed information, consult your DuPont Pharma Representative or see Prescribing Information.

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**N**on-residents think of Kansas as an expanse of flat, even prairie, land with a monotonous similarity, but nothing could be further from the truth. Not only does Kansas rise from 2,000 feet above sea level in the east to 4,000 feet at the Colorado border in a gentle, gradual slope, but it also has a varied topography.

One example is the chalk pillars of Gove County, in western Kansas. Castle Rock and Monument Rocks, pictured in the painting by Jim Hamil, consist of fossil-rich chalk pillars that rise 75 feet into the sky, sculpted over the centuries by wind and rain. One of the earliest reports of the "Monuments" occurred on the Frémont surveying expedition of 1842. Frémont reported that the rocks had been piled with buffalo bones by the Indians, who evidently also considered them to be some of nature's wonders. They are certainly worth a visit.

Monument Rocks also holds a place in history with the famed Seventh Cavalry and its controversial commandant, Lt. Col. George Armstrong Custer. Custer and six companies of the Seventh Cavalry arrived at Ft. Wallace in western Kansas on July 13, 1867, after a grueling 705-mile march that began at Ft. Hays on June 1. Their march would take them north through Nebraska and then south to Ft. Wallace. Their orders were "to hunt out and chastise the Cheyennes, and that portion of the Sioux who are their allies, between the Smoky Hill and the Platte." It was a difficult campaign that took its toll on men and animals. Men deserted and the Indians again proved to be elusive.

Word of flash floods and an outbreak of cholera at Ft. Hays caused Custer to fear for his wife's safety, since he had left her there. Ft. Wallace was also short of supplies and many of the men were sick. Traffic along the Smoky Hill-Butterfield Overland Stage Coach Route had stopped because of the Indian attacks.

Custer decided to open the trail to Ft. Hays, rescue supplies for Ft. Wallace and find his beloved Elizabeth, nicknamed "Libby." On July 15 he left Ft. Wallace with a detachment of the Seventh Cavalry and the following day reached the Monument Station. Here they rested, cooked coffee and moved on two miles to "The Monuments." Theodore Davis, an artist with *Harper's Weekly*, accompanied Custer on the march and

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## ABOUT OUR LOGO

In January 1935, a new logo appeared on the cover of KANSAS MEDICINE for the first time. This device represents two stethoscopes: the original monaural type as used by Laënnec, and the modern binaural variety. The logo was designed expressly for KANSAS MEDICINE by renowned graphic designer Bradbury Thompson, a native of Topeka and friend of two former editors of the journal, Dr. W.M. Mills and Dr. Lucien Pyle. As another former editor, Dr. Orville R. Clark, wrote in January 1955, the logo "has become as much a part of the journal as any of the features on the inside and is something which is ours alone."

wrote, "the monument rocks are considered the most remarkable on the plains; at a distance it is difficult to realize that they are not the handiwork of man, so perfectly do they resemble piles of masonry."

Custer's column halted at "The Monuments" and were met there by a supply train commanded by Capt. Frederick Benteen. After helping themselves to the supplies, they moved on. At Downers Station stragglers of the column were attacked by Indians. One man was killed and another wounded. Instead of pursuing the hostiles, Custer pushed forward, reaching Ft. Hays at 3 a.m. on July 18. The 150-mile march had been accomplished in only 55 hours, including all halts. Custer found that Elizabeth had gone, and he eventually traveled to Ft. Harker (Ellsworth) and finally to Ft. Riley, where Elizabeth was waiting.

For his adventure, Lt. Col. Custer would later be arrested and court-martialed on counts of leaving his command at Ft. Wallace without proper authority, overmarching his command, and failure to take measures to repulse the Indians at Downers Station.

A painting commemorating this incident, entitled *Monumental Journey*, by artist Jerry Thomas is at the Ft. Riley Cavalry Museum.

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# Health Care Reform — Quo Vadis?

**W**hile the Clinton plan for reform of America's health care remains under wraps, except for discreet "leaks" to test the political climate and sentiment, the Kansas Commission on the Future of Health Care (the 403 Commission) revealed some of its recommendations, chaired by Bill Roy, Sr., M.D. It seems that if some states already have, or are working on, health care reform, the federal government will be "easier" on them.



According to the plan promulgated by the 403 Commission, there will be a single-entity payor. Dr. Roy refers to the concept as a "single-collector system." The Health Care Purchaser for All Kansans (HCPAK) may be a government agency or perhaps a non-profit organization that will pay for the basic health care needs from a statewide fund. The financing of this fund would come from a capitation fee, adjusted for each person based on a projection of that person's health care costs. The fees will differ depending on age, sex (which the report calls gender), environment, and geographic location and population statistics. (We can't ask about these characteristics in our businesses, but then, rank has its privileges.) The money would be deducted from paychecks, or be paid by Medicare, Medicaid or out-of-pocket by the self-employed.

The HCPAK would contract with health service networks (HSNs) for services to be provided according to the basic health care benefits package (which has not yet been decided upon). It would also send payments for services to the health service networks. The HCPAK would report to the Kansas Health Commission, which in turn would establish the core benefit package and administer the program.

Health insurance companies would have a greatly reduced role to play in the new scheme. They will probably sell supplemental insurance for those benefits not covered by the core package, and they may be allowed to contract with health service networks.

At a presentation Dr. Roy gave to representatives from the Kansas Medical Society and the Kansas Hospital Association, Dr. Roy admitted that each of these suggestions and recommenda-

tions raises a hundred questions that will have to be ironed out before any plan emerges. He also indicated that the Legislature will probably debate and modify any recommendation by the Commission.

In July the Kansas Hospital Association held a meeting for hospital trustees on the subject of "America's Changing Health Care Scene." Herb Kuhn, a lobbyist for AHA, stated that at present there is no tangible Clinton plan. Rather, the Clinton "vision" is for multiple community-based plans with nationally guaranteed benefits, a central health alliance, and co-payments. Issues that have not been addressed, he said, are: freedom of choice, state-based programs, financing, hospital and provider tax to help finance the system, and development of a global budget. Short-term cost containment will probably be an initial step. Beware of an all-payor system in disguise!

Cynthia Johnson, senior manager in the area of national health policy practice for KPMG Peat Marwick, had spoken a few days before to the Legislature's Joint Committee on Health Care Decisions, and she observed that health service networks would be defined, structured and managed locally, provided they met 19 quality assurance standards set by the government and operated within a global budget tied to non-medical factors. The basic benefit package would be tied to tax benefits, but supplemental benefits would not be. Community rating would be in effect, and there would be managed competition with capitation rates, with multi-year contracts providing "reasonable" increases. The capitation would be total for urban areas and partial for rural areas.

Long-term care would be carved out and capitated like the Arizona system, as Arizona is also doing for their public programs. Ms. Johnson made an interesting statement: "You can go broke chasing federal dollars."

A panel composed of Donald Dunn, Jackson Coker, and H. Ryan Touchton spoke on "Creating New Hospital-Physician Relationships in a Health Reform Environment." They stressed that this is a time for collaboration, not competition; a time for defining the mission with the best interests of the patient and the community, and for increasing the role of preventive care. Communication and networking are vital parts of the reform

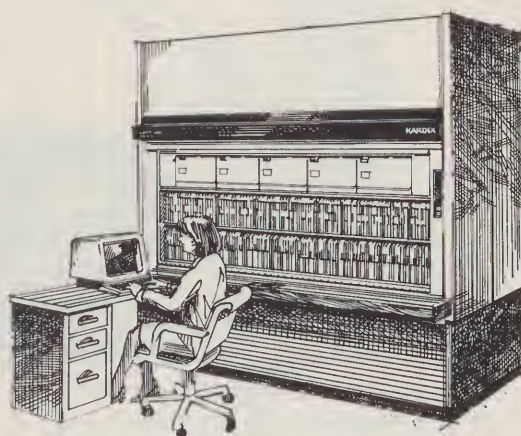


and good leadership is essential for the success of any plan. The main threats are the egos of all involved. While this is to many a time of crisis, it is also a time of opportunity. Don't wait — begin now!

It seemed to me that three areas most vital to successful reform were not addressed by either meeting: the need for state and federal relaxation of antitrust laws to allow the type of collaboration and networking called for; the reduction in state, federal, and insurer mandates that increase paperwork, staff and costs without increasing quality of care; and meaningful changes in the professional liability laws. All of these would help in reducing the cost of medical care, but neither Dr. Roy nor any of the speakers could offer any hope that these components would be added.

What is to be the upshot of all this information — some conflicting and some in accord? Nothing is decided as of this writing. Any plan will not come overnight, and in all probability is years away (three to five years, some are guessing), but that should not lull us into a state of euphoria. Neither should we wring our hands and await our cruel fate. There is a good chance that any plan will feature locally developed, defined and run networks according to national guidelines. What we should do is to meet with local community leaders, hospital administrators and hospital trustees to define the health needs of our communities, along with our strengths and weaknesses. This is equally true of rural and urban areas. Then we should seek out those who can supply what our individual communities lack and network with them. I can assure the rural areas that there will be a number of different agencies or big city networks camping at your door wanting to help you and your community.

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# The Clinton Health Care Speech — Live!

**O**n Monday, September 20, KMS was contacted by Sheila Burke, R.N., Senator Dole's chief of staff and health policy advisor, who invited us to come to Washington and hear President Clinton's address in the House gallery at the Capitol. Afterwards, several individuals from Kansas, including myself, would participate in a news conference to be held in Senator Dole's office. This was a great opportunity to make the concerns of Kansas physicians known in Washington.



Just two days later, I flew to the District of Columbia and hurried to the Capitol. After much discussion and inspection at security points, I was finally escorted to Senator Dole's sanctum sanctorum, where I met Ms. Burke, several aides and the other representatives with whom I would be discussing the speech. They were representatives of the Kansas Hospital Association, the Kansas State Nurses Association and the Kansas Farm Bureau.

Chaos reigned in the suite of small rooms, where obviously much studying and research had gone on at the desks piled high with books and papers. Ms. Burke fielded telephone calls constantly as we nibbled on a Mexican buffet and heard a brief outline of the protocol to be followed at the news conference after the speech. Then it was time to make our way through the bowels of the building to our seats in the House gallery — but not before we had been thoroughly inspected by more security personnel!

At last we were seated, about fifty feet from the podium. Mrs. Clinton, wearing a bright blue dress, made her entrance and sat next to Dr. C. Everett Koop, the former Surgeon General. Behind her was Ira Magaziner, the guru of the Administration's plan. Mrs. Clinton was greeted by a long round of applause — more, in fact, than the President himself received when he arrived.

As for the speech, it was certainly well organized and well presented, and I was amazed by the universal respect and approval of the plan from both Republicans and Democrats, who interrupted President Clinton frequently with applause that seemed to be genuine and not just a

matter of courtesy for the President. He highlighted many of the problems that frustrate patients, physicians, hospitals and others on a daily basis. His call for simplicity and the elimination of wasteful and bureaucratic paperwork requirements was welcomed by all. And no one would argue with his goal of health security for every American, regardless of income, employment or health status. I was pleased that the President focused on personal responsibility as a component of health reform. We see the effects of violence, substance abuse and destructive personal behaviors daily in our practices.

But there may be flaws in the plan itself. There appeared to be some significant differences between what the President promised and what was delivered. For example, some elements of the plan seemed to place economic considerations ahead of a patient's needs. And while cost accountability is needed, I was concerned that federally imposed limits on expenditures may result in rationing or even withholding of needed treatment.

Financing issues in the plan were also troubling. The means to pay for it are still unclear. Heavy reliance on cuts in Medicare and Medicaid are not only unrealistic but also could threaten future medical services for the elderly and poor. Furthermore, the plan will not work unless physicians are freed from the antitrust handcuffs that restrict them from collaborating, networking and negotiating on patient care delivery and financing issues. Finally, I was concerned by the potential of increased government regulation and corporate intrusion into the physician-patient relationship.

After the President's speech, I returned to Senator Dole's office for the news conference with the other Kansas health care representatives. We were joined by Senator Nancy Kassebaum, Congressman Pat Roberts and Congresswoman Jan Meyers, and several reporters. After 35 minutes of questions and answers, including questions from Wichita *Eagle* and Kansas City *Star* reporters, I came away with the impression of a huge groundswell of carefully orchestrated public opinion that there is a need for health care reform.

I do think all of us in medicine can agree that provision of good medical care to the populace is of paramount importance. However, the impe-



tus for this seems to be based on the need for insurance reform. Out of this has grown a monolithic restructuring of the whole health care delivery system — perhaps throwing out the good with the bad. Although it may well turn out that medical care (or at least access) is greatly enhanced by this process, it appears that the consensus on the “need” for reform is the engine that will make sure it is accomplished, whether at the federal or state level.

Comparing the President’s plan with the Republican plan, based on my discussions with Senators Dole and Kassebaum, the first big difference seems to be the mandate that employers must subsidize 80% of each employee’s insurance. The Republicans would make it an individual responsibility. Also, the Republicans believe the budget cap is not appropriate, as it will lead to rationing of care. Senator Dole is hinting very strongly at Republican reservations about the monopolistic nature of alliances that could become another large, inefficient government bureaucracy, inasmuch as it will clearly take a great deal of manpower to set up the numerous boards the Clinton plan would require, to sort out the benefits available to every individual in the country and to keep such a massive regulatory program in place.

Although everyone can agree on the very general principles that the President elucidated — security, simplicity, savings, choice by both physicians and patients, quality, and individual responsibility — it is much more difficult to agree when one comes to the details necessary to accomplish these things and keep within an affordable budgetary framework. And any reform plan must ensure the security and sanctity of the physician-patient relationship, the heart and soul of American medicine. We physicians in Kansas should look forward to participating in the reform process at both the federal and state levels. Our efforts will be guided by the belief that quality patient care should remain the primary consideration, and that reform efforts should not discard the strengths of the present system while striving to assure future access to health care for all Americans.



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Just because da Vinci missed out on AMWA membership is no reason you should!

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# Emergency Room Care and Civil Liability

WAYNE T. STRATTON, J.D.,\* *Topeka*

**A**s previously reported in "Medicina et Lex," the Consolidated Omnibus Budget Reconciliation Act of 1985 (COBRA), with its 1986 and 1989 amendments, includes the Emergency Medical Treatment and Active Labor Act (EMTALA). COBRA applies to all hospitals participating in Medicare which have emergency room facilities.



EMTALA requires that any individual seeking medical care in an emergency room have a medical screening examination to determine whether an emergency medical condition exists. Accordingly, if such a situation does exist, then medical care must be given to assure that no material deterioration of the patient's condition is likely to occur. Only after stabilization may a patient be transferred.

There are exceptions to the transfer-upon-stabilization rule. If the physician certifies that the benefit of the transfer outweighs the risk, the patient may be transferred before stabilization. Furthermore, the rule is lifted if the patient refuses to consent to examination or treatment, or when a patient affirmatively requests to be transferred to another hospital.

Violation of the act creates a cause of action. Governmental penalties and/or civil suits may be brought against the hospital. Several recent decisions have now determined that the physician may not be sued in a civil suit. It is clear, however, that upon violation of the act, the physician may be fined and/or excluded from federal and state health care programs.

The 10th Circuit Court of Appeals has answered the question of whether a private right of action exists under EMTALA against the examin-

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Upon violation of the act, the physician may be fined and/or excluded from federal and state . . . programs.

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ing physician. The court of appeals affirmed the lower court holding that the "plain language" reading of EMTALA creates a civil action against hospitals, but not against physicians. The 10th Circuit is not alone in its view; the decision was followed closely by neighboring circuit courts.

A concern for Kansas physicians, however, is language contained in the recently amended Department of Health and Environment regulations pertaining to hospitals. This appears to follow the lofty purpose of EMTALA by stating:

"No patient shall be transferred until the patient has been stabilized. A written statement of the patient's immediate medical problem shall accompany the patient when transferred. Every patient seeking medical care from the emergency services who is not in need of immediate medical care or for whom services cannot be provided by the hospital shall be given information about obtaining medical care." K.A.R. 28-34-16a (b)(2).

This regulation lacks the "plain language" limiting such a cause of action to hospitals. Indeed, prior case law has allowed the hospital regulations to be introduced as evidence of the standard of care in a suit against a physician.

Although proper documentation by the examining physician will not fully insulate the hospital from suit, it will show that appropriate steps were taken to insure the well-being of the patient, providing a viable defense under the Emergency Medical Treatment and Active Labor Act. The Kansas regulations add another legal reason for physicians to explain fully and adequately the steps taken to stabilize the patient and document the reason for the transfer.

\*KMS Legal Counsel.

Comments appearing herein are not intended as a substitute for legal analysis or advice. Answers to legal questions depend largely upon the particular facts of a case. The reader is urged to consult an attorney for answers to specific legal questions.

These comments do not necessarily represent the views of KANSAS MEDICINE, or the Kansas Medical Society. For further information, contact Mr. Stratton, 515 S. Kansas, Topeka, KS 66603, 1-800-332-0248.

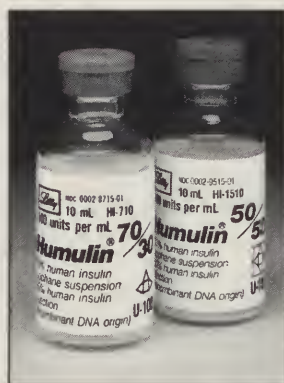





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# KMSA Membership Is a Valuable Asset

**D**ear KMS Member,  
I wanted the article for this issue to inform you about our KMS Alliance membership goals for the year. Mary Woods, Membership Vice President, was thinking over her focus for this assignment and was assisted by her husband, Greg, a KMS member. In this article, Greg directs his thoughts to you as physicians and tells why you should make it a priority for your spouse to join the KMS Alliance.



Greg is a Hays orthopedic surgeon practicing in partnership with Howard Wilcox, M.D., and Earl Carlson, M.D. Greg and Mary have been in Hays for four years and are the parents of three boys and a girl.

Thank you for your attention!

*Cathy Wilcox*

My wife, Mary, is a member of the KMS Alliance. Her membership in the KMSA provides me with valuable support, both professionally and personally. Through the KMSA, she is involved with a variety of health projects, supports medical education and has an active interest in legislative issues.

Last year, KMSA sponsored health projects on elder abuse education and bone marrow and organ donation. The efforts of the KMSA increased the number of Kansans in the National Marrow Donor Program by almost 15%. This year, family violence and breast cancer education and prevention are primary concerns for the Alliance.

The KMSA works to assure quality training for future physicians through their support of the AMA Education and Research Foundation. They recently donated more than \$32,000 to Kansas medical schools from statewide fund-raising activities.

Legislative issues are a priority for the KMSA. In February, they will sponsor a Legislative Day in Topeka. This will provide an opportunity for

KMSA members and physicians to meet with state senators and representatives.

The medical profession is facing a new era of uncertainty and change. Our membership in the KMS and our spouses' membership in the KMSA will allow us to work together as a team and speak with one voice. Our joint efforts will enhance our impact on medical legislation and improve our ability to provide quality health care. Our spouses and the KMSA are our strongest allies.

This year, Mary is serving as KMSA Vice President for Membership Development. She will be happy to provide membership information to your spouse. Please write or call: Mary Woods, 2734 Thunderbird Drive, Hays, Kansas 67601; telephone 913-628-3493.

Annual combined membership dues for the KMSA and AMAA are \$40. This is money well spent for our greatest source of support! KMSA membership for your spouse will be a valuable asset.

*Gregory Woods, M.D.*



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# Kansas Women Physicians Respond to Survey

SUSAN WARD\*

**S**eptember is Women in Medicine Month, so it seems appropriate to observe it in the journal by reporting the results of KMS' recent survey of women physicians in Kansas. The objectives of this survey were to determine respondents' interest in organized medicine, and specifically in the Kansas Medical Society; and to learn about the careers of these women and whether their needs are being met by organized medicine.

Surveys were sent to 674 licensed female physicians in Kansas, of whom 536 were KMS members and 138 were non-members. A total of 208 responses were received, from 164 KMS members and 44 non-members.

Among the KMS members who responded, 39 (21.5%) believed KMS serves the physicians of Kansas "very well," 130 (71.8%) answered "reasonably well," and a total of 12 (6.6%) answered "not very well" or "not at all well." Asked if KMS provides women physicians with an adequate opportunity to achieve roles of leadership or influence to the extent they wish to do so, 44 (22.3%) replied "yes," 34 (17.2%) said "no," and 119 (60.4%) were unable to say. Most respondents, 135 (66.8%), said it was "very important" for women to hold leadership positions within organized medicine; 50 (29.2%) believed it is "not very important," and a total of 8 (3.8%) believed it is "somewhat important" or "not at all important."

## Non-Member Opinions

Those who are not members of KMS were queried about their views of the society. Asked to what extent they thought their membership and involvement in KMS would be welcomed, 19 (22.3%) thought they would be "very welcome," 26 (30.5%) said "somewhat welcome," 8 (9.4%) said "not very welcome," another 8 (9.4%) said "not at all welcome," and 24 (28.2%) did not know.

\*Production Editor

Thanks to Treasa Jenson of the KMS staff for compiling the survey responses.

## Attitudes Toward Organized Medicine

The women were asked if they belong to the American Medical Women's Association (AMWA). Sixteen who replied were members of AMWA, and 2 (2.5%) said this made membership in organized medicine unnecessary, while 14 said it did not. Sixty-two (79.4%) said they were not members of AMWA.

Thirty-five women (46.6%) felt they have specific professional needs that can be met by formalized activity within either KMS or a women physician's organization such as AMWA, 28 (37.3%) didn't perceive any such needs, 6 (8.0%) chose KMS to fulfill such needs and 6 (8.0%) chose a women's organization.

If symposia were offered by KMS regarding issues pertinent to the problems of women physicians, 21 (25.0%) would be "very interested," 43 (51.1%) would be "possibly interested," and 20 (23.8%) were "not interested." Symposia subjects that generated the most interest were career/family conflicts: 45 (32.3%); functioning in a male-dominated profession: 37 (26.6%); and leadership training for women: 45 (32.3%). A multitude of other topics, including assertiveness, the "glass ceiling," and sexual harassment, were of interest to one or two women. Asked if their needs for such programs were being met by other organizations, 12 (16.2%) said "yes," 40 (28.7%) said "no," and 22 (29.7%) did not perceive a need for them. Of those who replied in the affirmative, most indicated that their specialty societies were providing the programs they found helpful.

Many Kansas women physicians belong to at least one specialty society. Those listed by the survey respondents appear in Table 1.

Table 2 shows the reasons given for not joining KMS. Asked if there are "any actions KMS might take that could persuade you to become a member," 2 (5.0%) said "definitely," 20 (50.0%) said "probably," 16 (40.0%) said "probably not," and 2 (5.0%) said "definitely not." Some of the actions these physicians mentioned that might persuade them to join KMS included offering lower dues/fees, or fees based on number of hours



TABLE 1  
SPECIALTY SOCIETIES

American College of Physicians	8 (5.9%)	SAM	1 (.7%)
Kansas College of Physicians	1 (.7%)	Kansas Academy of Family Physicians	6 (4.4%)
American Academy of Pediatrics	13 (9.7%)	American Society of Bone and Muscle Research	1 (.7%)
American Academy of Family Physicians	20 (14.9%)	American Society of Anesthesiologists	2 (1.4%)
American Board of Family Physicians	1 (.7%)	American Thoracic Society	1 (.7%)
American Board of Emergency Medicine	1 (.7%)	American College of Chest Physicians	1 (.7%)
American College of Preventive Medicine	2 (1.4%)	American Academy of Neurology	2 (1.4%)
American Public Health Association	1 (.7%)	American Academy of Otolaryngic Allergy	2 (1.4%)
American College of Cardiology	1 (.7%)	American College of Surgeons	2 (1.4%)
American Society of Clinical Pathologists	5 (3.7%)	Kansas Psychiatric Society	4 (2.9%)
Kansas City Endocrine Round Table	2 (1.4%)	American Board of Quality Assurance	1 (.7%)
Kansas City Obstetrics and Gynecology Society	2 (1.4%)	Wichita Society of Neurosciences	1 (.7%)
College of American Pathologists	5 (3.7%)	American Academy of Allergy and Immunology	1 (.7%)
KCSP	1 (.7%)	International Research of Anesthetics	1 (.7%)
American Psychiatric Society	11 (8.2%)	Kansas Academy of Physicians	1 (.7%)
American College of Obstetrics & Gynecology	5 (3.7%)	Association of Military Surgeons	1 (.7%)
American Academy of Child and Adolescent Psychiatry	2 (1.4%)	American College of Emergency Physicians	1 (.7%)
Christian Medical and Dental Society	1 (.7%)	American Geriatric Society	1 (.7%)
American Society for Colposcopy and Cervical Pathology	1 (.7%)	ACIR	1 (.7%)
American Academy of Physical Medicine and Rehabilitation	2 (1.4%)	Association of Women Psychiatrists	1 (.7%)
American Congress of Rehabilitation Medicine	1 (.7%)	American Academy of Emergency Medicine	1 (.7%)
American Academy of Ophthalmology	2 (1.4%)	Kansas Pathology Society	1 (.7%)
American Academy of Otolaryngology	1 (.7%)	Association of American Ind. Physicians	1 (.7%)
AAGL	1 (.7%)	Greater Kansas City Pediatrics Society	1 (.7%)
American Fertility Society	1 (.7%)	American College of Radiology	2 (1.4%)
American College of Emergency Medicine	1 (.7%)	Radiological Society of North America	2 (1.4%)
		AIVM	1 (.7%)
		Society of Cardiovascular Interventional Radiology	1 (.7%)

worked; and sending information about the organization, describing its nature and purpose.

The physicians were asked if they felt it appropriate for women KMS members to have particular involvement in approaching other women physicians to join the association, and 67 (33.6%) answered "definitely," 123 (61.8%) said "possibly," and 9 (4.5%) said "definitely not."

### Practice Patterns

The women who were surveyed practice for varying amounts of time each week, as follows: 50+ hours: 85 (43.1%); 41–50 hours: 70 (35.5%); 31–40 hours: 22 (11.1%); 21–30 hours: 9 (4.5%); and 20 or fewer hours: 11 (5.5%). The largest number, 60 (28.8%), are in a group, fee-for-service practice, followed by 44 (21.1%) in solo practice; 27 (12.9%) in an academic setting; 25 (12.0%) in a partnership/other non-group arrangement; 15 (7.2%) in other salaried; 14 (6.7%) in residency; 8 (3.8%) in government; and 9 (4.1%) in other situations. Most are board certi-

fied: 73.4%, compared with 26.5% who are not.

Regarding income, 44 (21.8%) consider their earnings "very satisfactory," 108 (53.7%) "satisfactory," 44 (21.8%) "not very satisfactory," and 5 (2.4%) "not at all satisfactory." One hundred twenty-three (60.2%) thought their earnings would compare to those of a male physician in the same occupational situation, 4 (1.9%) thought a male physician would earn less, and 77 (37.7%) thought a male physician would earn more.

### Family Life

Marital status of the surveyed physicians was as follows: married: 155 (77.1%); single: 26 (12.9%); widowed: 2 (.9%); and divorced or separated: 18 (8.9%). Among those who were married, 56 (35.4%) had physician spouses, and 102 (64.5%) did not. Of the physician spouses, 36 (66.6%) were members of KMS.

One hundred and four (57.1%) reported having children at home, and 78 (42.8%) did not. Of those with children, 22 (17.6%) had one child;

TABLE 2

*There are a number of reasons why physicians may not have chosen to join KMS. How important is each of the following reasons to you?*

<i>Reason</i>	<i>Very important</i>	<i>Somewhat important</i>	<i>Not very important</i>	<i>Not at all important</i>	<i>No opinion/not applicable</i>
I don't really know enough about KMS to decide whether I want to join	11 (21.1%)	16 (30.7%)	4 (7.6%)	7 (13.4%)	14 (26.9 %)
The KMS does not represent my views	9 (16.0%)	13 (23.2%)	15 (26.7%)	2 (3.5%)	17 (30.3%)
I receive similar or better benefits from my specialty society	14 (24.1%)	15 (25.8%)	11 (18.9%)	3 (5.1%)	15 (25.8%)
Dues are too high for benefits received	21 (33.8%)	18 (29.0%)	10 (16.1%)	3 (4.8%)	10 (16.1%)
I have never been approached or asked to join	7 (12.2%)	11 (19.2%)	6 (10.5%)	8 (14.0%)	25 (43.8%)
Other important reasons (specify):					
too busy — 6(2.0%)					
need family membership — 1(.3%)					
have out of state practice — 1(.3%)					

61 (48.8%) had two; 34 (27.2%) had three; 7 (5.6%) had four and 1 (.8%) had six. Ninety-three (83.7%) had children young enough to require care while their mother is at work, and 18 (16.2%) did not. Child care was provided as follows: full-time (live-in) help at home: 12 (11.0%); daycare center/babysitter: 44 (40.3%); full-time (live-out) help at home: 8 (7.3%); part-time help at home: 25 (22.9%); spouse/other family member: 17 (15.5%); and camp/latchkey program: 3 (2.7%). Time devoted to medical practice was affected by parental responsibility as follows: "significantly" 60 (51.7%); "somewhat" 40 (34.4%); "slightly" 15 (12.9%), and "not at all" 1 (.8%). See Table 3 for a detailed breakdown of hours worked and number of children.

### Conclusions

Kansas women physicians seem to manage the balance between personal and professional life well. While 104 have children at home, and 60 feel their medical practice is affected "signifi-

cantly" by their parental responsibilities, 90.4% of women with one child, 80.3% of women with two children, 74.9% of women with three children, and 49.9% of women with four children are able to work 41 or more hours per week.

It seems that most Kansas women physicians are quite content with several important aspects of their practice, such as salary and equitable treatment from colleagues (since little interest was expressed in symposia on the proverbial "glass ceiling," sexual harassment and other areas often cited as problematic for women in other occupations). However, although many physicians were members of a specialty society or organized medical association, not all were convinced that these organizations were effective. Twenty-eight percent of those who responded did not perceive a professional need for an organization such as KMS, yet 40% felt their needs for educational symposia were not being met by other organizations. Also, 45% of those responding indicated

*(Continued on page 227.)*

TABLE 3

	<i>Number of Children</i>					
	<i>0</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>6</i>
-20 hours	7 (8.8%)	0 (0.0%)	2 (3.2%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
21-30 hours	1 (1.2%)	0 (0.0%)	4 (6.5%)	1 (4.1%)	1 (16.6%)	1 (100.0%)
31-40 hours	6 (7.5%)	2 (9.5%)	6 (9.8%)	5 (20.8%)	2 (33.3%)	0 (0.0%)
41-50 hours	22 (27.8%)	6 (28.5%)	31 (50.8%)	7 (29.1%)	1 (16.6%)	0 (0.0%)
50+ hours	43 (54.4%)	13 (61.9%)	18 (29.5%)	11 (45.8%)	2 (33.3%)	0 (0.0%)
	100%	100%	100%	100%	100%	100%



## THE WAY IT WAS

"The more things change, the more they remain the same." Excerpts from previous *Transactions of the Kansas Medical Society* prove the validity of that statement. In 1878 President W. L. Schenck, M.D., in his presidential address, stressed the need for a State Board of Health. Excerpts from his speech reveal much that is shared by many of us today.

"There are too many in the profession of medicine who look upon public sanitation as only incidental to their knowledge and duties. If Kansas has made no demand for this knowledge, so much more should we possess, and press its importance. For whilst personal and private hygiene must supplement all laws looking to the prevention of disease, no amount of care upon the part of individuals can prevent the invasion and destruction of epidemics without some general provision for protection. . . . In our State organization we should especially note the progress of State Medicine, and strive to exert an influence that will mold public opinion and create laws for the protection of those interests to which we devote our lives. Whilst it would seem reasonable that legislators should be willing to be advised by those who labor to understand the cause, prevention and cure of disease, it will be found far otherwise. As individuals they will gladly solicit your advice for the protection of themselves and their families; as legislators they will look down upon you and ignore you. . . . And so the reports come to us, from east and west, from north and south, indicating that what would seem of easy accomplishment, will only be effected by persevering effort. But failure should not discourage us. . . . They have established State and National Boards of Agriculture, from among the best minds devoted to its development. They have aided in their investigations, and published their reports, and have discovered that human wisdom does not understand the "metes and bounds" of even animal and plant life. We believe the life and development of the men and women of the State are as important to its interests and to humanity, as the life and development of its hogs and potatoes, and we believe they are capable of expansion and prolongation, and we should ask, we should demand, that the State of Kansas shall manifest an

equal interest in them, and that its legislators shall enact a law organizing a State board of health, giving it full power to protect the interests under its care. To this end let us labor, faithfully, earnestly, and of the 2,000,000 annually slain in the United States by preventable diseases, rescue whom we may by State Preventive Medicine."

Subsequent perusal of the *Transactions* reveals in 1881 a resolution to "appoint a committee of five, who shall report at its next annual meeting the form of a bill organizing a State Board of Health, and suitable laws for the protection of health and life." Progress was slow, but in the *Transactions* of 1885 Dr. Schenck, who started the movement for a State Board of Health, submitted the following resolution: "That this Society, laboring as it is in the interest of health and longevity of the people of the State, tenders its thanks to Mr. Kelly and other members of the State Legislature who labored for the passage of our health bill."

And you thought times had changed!

---

### SURVEY

(Continued from page 226.)

that there "definitely" or "probably" are actions KMS might take that could persuade them to join. Providing additional information about the organization was cited as one such action. More information may also increase the number who feel KMS provides women physicians with adequate opportunity to achieve roles of leadership (119 were "unable to determine").

Among those who already are members, 21.5% felt KMS serves Kansas physicians "very well," while 71.8% answered "reasonably well." Perhaps more information is needed to determine ways of increasing the satisfaction of the latter group to the "very well" level. Meanwhile, KMS will be taking steps in coming months to meet the needs articulated by the women physicians who participated in the survey.

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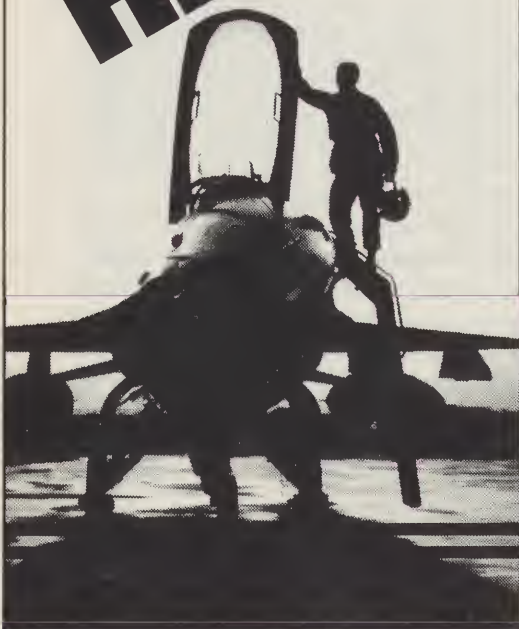
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# In Memoriam

KANSAS MEDICINE notes with sorrow the death of George S. Bascom, M.D., of Manhattan, on August 7, 1993. Dubbed "our own state medical poet laureate" last spring by 1992-93 KMS President Richard Meidinger, M.D., Dr. Bascom was the author of three volumes of poems, which ranged from classically styled sonnets, such as "And If —," to more whimsical or ironic free verse, as exemplified by "Passage."

## PASSAGE

One corner of the menu  
informed me  
I was now entitled to a discount  
on the grounds of senior citizenship.  
My irritation knew no bounds.  
Scornfully I threw my muscled shoulders back,  
tilted to a favorable perspective  
the tanned, lean features  
I admire and shave each day.  
Then I glanced down and found my fly unzipped.  
"Oh, hell," I thought,  
"I'll take the ten percent."

## AND IF —

And if death takes you in his brutal way,  
what then of me who learned of love at last?  
What of this heart fresh opened — must it pay  
for that with grief, for feast days pay a fast?  
A loss so great, a loss so hard to bear  
wants valor as love's fierce compatriot.  
To risk a pain that even high gods fear,  
before which pride and beauty should not strut,  
to seek the joy that springs from risk alone  
and chance the wound of loving what must die  
unmasks an impulse deep, deep in our bone  
a human task that human hearts must try  
knowing we must then suffer grief's old wrong  
for briefly lifting up man's truest song.



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really good. And he thinks being exposed to different types of medical practice will serve him well when he returns to his hometown to establish a community health center.

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# Psychology and Psychiatry in Primary Care Medical Settings: Introduction

BRUCE S. LIESE, Ph.D., *Guest Editor*

**I**t is a pleasure to introduce this special issue of KANSAS MEDICINE. In this issue, we offer a series of four articles which relate psychology and psychiatry to the practice of primary care medicine.

In the first article, Dr. Belinda Vail, Betsy Leonard, and I provide guidelines and suggestions for identifying three of the most common psychiatric problems: anxiety, depression and alcoholism. We emphasize the importance of recognizing and diagnosing such problems, and we provide specific criteria and techniques for doing so.

In the second article of this series, Dr. Don Milligan offers suggestions regarding practical psychopharmacotherapy for the non-psychiatrist. Dr. Milligan briefly discusses the clinical problems of depression, anxiety, sleep disorders, psychoses, and attention deficit disorder, and he offers useful suggestions about appropriate pharmacologic interventions for each of these problems.

In the third article of this series, Dr. Mark Larson and I offer suggestions for conducting practical, office-based counseling. This article is one of several papers appearing in KANSAS MEDICINE during 1993 which apply cognitive therapy in the primary care medical setting.

The article by Dr. Don Nease describes mental health issues in rural settings. Since Kansas is a predominantly rural state, rural mental health is an important topic. In his article, Dr. Nease provides the reader with a realistic overview of mental health in rural areas. He also describes factors which place rural Kansans at risk for mental disorders. And finally, he discusses the physician's role in addressing mental health problems in rural settings.

In conclusion, this special issue is meant to provide a very brief overview of psychological and psychiatric principles for the primary care physician. On behalf of the authors and editorial board, I hope that readers will find this issue interesting and informative.

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I would like to thank Barbara Nelson, my secretary, for her hard work on this project. I would also like to express special gratitude to my colleagues in the Department of Family Practice (especially those who contributed to this issue), who have taught me so much about psychology and medicine. Most of all, I would like to thank Dr. Ziana Liese: my wife, my best friend, and my favorite family physician, for her infinite love and gentle guidance.



# The Identification of Psychiatric Problems in Primary Care Medical Settings

BELINDA A. VAIL, M.D., BRUCE S. LIESE, Ph.D., AND BETSY R. LEONARD, M.A.,  
Kansas City

**P**sychediatric and substance abuse problems are seen frequently in the primary care setting but often go undiagnosed and, therefore, untreated. In a prospective study of over 20,000 adults over a 13-month period, Regier and his colleagues (1993) found an annual prevalence rate of 28% for mental and addictive disorders in the United States. Additionally, this study determined that only about one-half of the patients identified with psychiatric problems were identified in the primary care setting.

Patients with psychiatric or substance abuse problems may present to physicians with vague, diffuse or unsubstantiated physical complaints. Physicians may, in response, focus primarily on physical illnesses and fail to recognize the signs of a psychiatric disorder (Feightner & Worrall, 1990; Magruder-Habib, Durand & Fry, 1991; Weissman, 1990; Wood, 1990). Thus, in order to establish an accurate diagnosis, psychiatric conditions should be considered carefully in the initial evaluation of patients.

The resource most commonly used to diagnose psychiatric and substance abuse problems is the revised third edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-III-R; APA, 1987). Physicians can apply DSM-III-R diagnostic criteria and use other diagnostic aids during patient visits to evaluate for the presence of psychiatric disorders. Physicians carry the responsibilities of recognizing the signs and symptoms of these disorders, accurately diagnosing the problem, and offering adequate treatment.

This article will briefly describe the three most common disorders (depression, anxiety and alcoholism), the diagnostic criteria for diagnosing each, and the medical conditions which may contribute to the onset of, mimic, or are often associ-

ated with these disorders. Case reports are presented to illustrate each disorder.

## Depression

Grace is a 70-year-old black female who presented with complaints of knee pain, fatigue, insomnia and shortness of breath. A complete history and comprehensive exam did not yield a clear-cut physical etiology for any of her symptoms. Grace's affect was flat and she appeared tired. Further questioning of her and her daughter elicited additional symptoms of depressed mood, decreased interest and pleasure, psychomotor retardation, feelings of guilt and worthlessness, and indecisiveness. She denied suicidal ideation, but did reiterate her feelings of worthlessness by admitting that there was little reason for her to be alive.

Depression, or depressive disorder, is among the most commonly diagnosed psychiatric disorders. It is estimated that at least five percent of Americans suffer from depression in any six-month period (Kamerow, 1988). This number is higher among the medically ill; 33% of inpatients and 12–36% of outpatients report depressive symptoms (Cameron, 1990). Identifying these patients is critical because over 50% of suicide victims are retrospectively found to have the symptoms of depression (Guze & Robbins, 1970).

**Diagnostic Criteria.** Depression or dysthymic disorder is characterized in DSM-III-R by a dysphoric or sad mood without periods of elevated mood (APA, 1987). To meet DSM-III-R criteria for a major depressive episode, a patient must have a dysphoric mood or loss of interest or pleasure in usual activities for at least two weeks with at least four of the remaining criteria listed in Table 1.

A disparity between a patient's complaints and the physician's findings during the physical exam is often a clue to depression. Grace's complaints of shortness of breath, fatigue, insomnia, and so forth, did not fit with her medical history and findings during a physical exam. After the physician realizes this disparity, further questioning and recognition of common symptoms associated

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TABLE 1  
DSM-III-R  
DIAGNOSTIC CRITERIA FOR MAJOR DEPRESSIVE EPISODE

Note: A "Major Depressive Syndrome" is defined as criterion A below.

- A. At least five of the following symptoms have been present during the same two-week period and represent a change from previous functioning; at least one of the symptoms is either (1) depressed mood, or (2) loss of interest or pleasure. (Do not include symptoms that are clearly due to a physical condition, mood-incongruent delusions or hallucinations, incoherence, or marked loosening of associations.)
- (1) depressed mood (or can be irritable mood in children and adolescents) most of the day, nearly every day, as indicated either by subjective account or observation by others
  - (2) markedly diminished interest or pleasure in all, or almost all, activities most of the day, nearly every day (as indicated either by subjective account or observation by others of apathy most of the time)
  - (3) significant weight loss or weight gain when not dieting (e.g., more than 5% of body weight in a month), or decrease or increase in appetite nearly every day (in children, consider failure to make expected weight gains)
  - (4) insomnia or hypersomnia nearly every day
  - (5) psychomotor agitation or retardation nearly every day (observable by others, not merely subjective feelings of restlessness or being slowed down)
  - (6) fatigue or loss of energy nearly every day
  - (7) feelings of worthlessness or excessive or inappropriate guilt (which may be delusional) nearly every day (not merely self-reproach or guilt about being sick)
  - (8) diminished ability to think or concentrate, or indecisiveness, nearly every day (either by subjective account or as observed by others)
  - (9) recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide

with depression will help in the eventual diagnosis. Reduced energy level is the most common symptom, occurring in 97% of depressed patients. Symptoms found in greater than 75% of patients include impaired concentration, anorexia, initial insomnia, loss of interest, and difficulty starting activities. Additionally, patients exhibiting markedly impaired self-esteem or a strong sense of worthlessness should be further screened for depression.

Grace reported several depressive symptoms upon further questioning, and her physician was able to make a diagnosis of depression. Grace was started on an antidepressant, and she began counseling. Her shortness of breath resolved without treatment and her knee pain was well controlled with ibuprofen.

*Medical Conditions Contributing to Depression.* The incidence of depression is higher among physically ill patients. Therefore, physicians must

TABLE 2  
MEDICAL CONDITIONS ASSOCIATED WITH DEPRESSION

Cardiovascular disease	Neurologic disorders
Cardiomyopathy	Cerebrovascular disease
Congestive heart failure	Dementia
Myocardial infarction	Epilepsy (particularly
Collagen vascular disorders	temporal lobe focus)
Systemic lupus erythematosus	Huntingtons disease
Polyarteritis nodosa	Multiple sclerosis
Endocrine disorders	Myasthenia gravis
Diabetes mellitus	Parkinson's disease
Hyperadrenalism	Postconcussion
Hypoadrenalism	Progressive supranuclear
Hyperparathyroidism	Stroke
Hypopituitarism	Subarachnoid hemorrhage
Hyperthyroidism	Vitamin deficiencies
Hypothyroidism	Beriberi (vitamin B <sub>1</sub>
Infections	deficiency)
Epstein-Barr virus	Pellagra (nicotinic acid
Encephalitis	deficiency)
Hepatitis	Pernicious anemia
Human immunodeficiency virus	(vitamin B12 deficiency)
Mononucleosis	Wernicke's encephalopathy
Pneumonia	Others
Postinfluenza	Alcoholism
Syphilis	Anemia
Neoplasms	Electrolyte abnormalities
Central nervous system	Heavy metal poisoning
Lung	Hemodialysis
Pancreatic carcinoma	Hypertension

Cameron, O.G. (1990). Guidelines for diagnosis and treatment of depression in patients with medical illness. *Journal of Clinical Psychiatry*, 51 Suppl, 49-54.



TABLE 3  
DSM-III-R  
DIAGNOSTIC CRITERIA FOR GENERALIZED ANXIETY DISORDER

- 
- A. Unrealistic or excessive anxiety and worry (apprehensive expectation) about two or more life circumstances, e.g., worry about possible misfortune to one's child (who is in no danger) and worry about finances (for no good reason), for a period of six months or longer, during which the person has been bothered more days than not by these concerns. In children and adolescents, this may take the form of anxiety and worry about academic, athletic, and social performance.
- B. If another Axis I disorder is present, the focus of the anxiety and worry in A is unrelated to it, e.g., the anxiety or worry is not about having a panic attack (as in Panic Disorder), being embarrassed in public (as in Social Phobia), being contaminated (as in Obsessive Compulsive Disorder), or gaining weight (as in Anorexia Nervosa).
- C. The disturbance does not occur only during the course of a Mood Disorder or a psychotic disorder.
- D. At least 6 of the following 18 symptoms are often present when anxious (do not include symptoms present only during panic attacks):
- Motor tension*
- (1) trembling, twitching, or feeling shaky
  - (2) muscle tension, aches, or soreness
  - (3) restlessness
  - (4) easy fatigability
- Autonomic hyperactivity*
- (5) shortness of breath or smothering sensations
  - (6) palpitations or accelerated heart rate (tachycardia)
  - (7) Sweating, or cold clammy hands
  - (8) dry mouth
  - (9) dizziness or lightheadedness
  - (10) nausea, diarrhea, or other abdominal distress
  - (11) flushes (hot flashes) or chills
  - (12) frequent urination
  - (13) trouble swallowing or "lump in throat"
- Vigilance and scanning*
- (14) feeling keyed up or on edge
  - (15) exaggerated startle response
  - (16) difficulty concentrating or "mind going blank" because of anxiety
  - (17) trouble falling or staying asleep
  - (18) irritability
- E. It cannot be established that an organic factor initiated and maintained the disturbance, e.g., hyperthyroidism, Caffeine Intoxication.
- 

TABLE 4  
DSM-III-R  
*Diagnostic Criteria for Panic Disorder*

- 
- A. At some time during the disturbance, one or more panic attacks (discrete periods of intense fear or discomfort) have occurred that were (1) unexpected, i.e., did not occur immediately before or on exposure to a situation that almost always caused anxiety, and (2) not triggered by situations in which the person was the focus of others' attention.
- B. Either four attacks, as defined in criterion A, have occurred within a four-week period, or one or more attacks have been followed by a period of at least a month of persistent fear of having another attack.
- C. At least four of the following symptoms developed during at least one of the attacks:
- (1) shortness of breath (dyspnea) or smothering sensations
  - (2) dizziness, unsteady feelings, or faintness
  - (3) palpitations or accelerated heart rate (tachycardia)
  - (4) trembling or shaking
  - (5) sweating
  - (6) choking
  - (7) nausea or abdominal distress
  - (8) depersonalization or derealization
  - (9) numbness or tingling sensations (paresthesias)
  - (10) flushes (hot flashes) or chills
  - (11) chest pain or discomfort
  - (12) fear of dying
  - (13) fear of going crazy or of doing something uncontrolled
- Note: Attacks involving four or more symptoms are panic attacks; attacks involving fewer than four symptoms are limited symptom attacks.
- D. During at least some of the attacks, at least four of the C symptoms developed suddenly and increased in intensity within ten minutes of the beginning of the first C symptom noticed in the attack.
- E. It cannot be established that an organic factor initiated and maintained the disturbance, e.g., amphetamine or caffeine intoxication, hyperthyroidism.
- Note: Mitral valve prolapse may be an associated condition, but does not preclude a diagnosis of Panic Disorder.
-

perform thorough evaluations of any persistent somatic complaints. Approximately 25% of medically ill patients suffer from depression which predates the medical illness; however, depression occurs as a result of the medical illness in the remainder of these patients. In addition, the frequency and severity of the depression seems to correlate with the severity of the medical illness.

A number of medical conditions contributing to the onset of depression are listed in Table 2. Some diseases are associated with an especially high rate of depression, as would be expected. Depression in cancer and post-stroke patients has been reported to have a greater than 40% prevalence rate, and 90% of patients with Parkinson's disease have been reported to suffer from depression (Cameron, 1990).

Drug reactions also lead to depression, and it is imperative that physicians take a thorough medication history. Physicians should be aware of older medications, such as reserpine, which have been known to contribute to depression. Additionally, physicians should scrutinize and monitor the use of newer medications for depressive symptoms.

## Anxiety Disorders

Tim is a 37-year-old attorney who presented to the emergency room with chest tightness and shortness of breath exclaiming, "I think I'm having a heart attack!" His chest pain had come at rest, and he previously had never experienced chest tightness. His history was significant for an elevated cholesterol of 235, and his father died of a myocardial infarction at age 45. Tim's work-up in the emergency room produced a negative treadmill. On a subsequent visit to his primary care physician, Tim related his anxiety about his health and his fear of having a heart attack.

Approximately 12% of Americans suffer from anxiety disorders (Kamerow, 1988). The most common of these are generalized anxiety and panic disorder. Panic disorder affects two to four percent of the population and is more commonly reported in females than males (Wood, 1990). These disorders are associated with decreased well-being, increased alcohol and drug abuse, and increased suicide attempts (Weissman, 1990).

**Diagnostic Criteria.** DSM-III-R describes panic attacks as appropriate responses to inappropriate stimuli. The attacks produce the symptoms common in fear. Autonomic nervous system responses such as tachycardia/palpitations, rapid breathing, dizziness, tremor and diaphoresis occur without any perceptible stimulus. The case study above illustrates this point in that Tim's symptoms were sufficient to suspect a heart at-

tack; however, there was no perceptible organic factor initiating those symptoms. DSM-III-R criteria for generalized anxiety disorder and panic disorder are listed in Tables 3 and 4 (APA, 1987).

Patients with anxiety disorders may present to physicians at a young age with numerous somatic complaints. When one condition is ruled out, these patients may soon present with new and equally bothersome complaints. Physicians must be sufficiently familiar with diagnostic criteria for panic and anxiety disorders to diagnose these in a timely fashion. Early diagnosis can significantly reduce the time, cost, and morbidity of extensive evaluations.

**Medical Conditions Which Mimic Anxiety and Panic Disorders.** Anxiety and panic disorders produce a vast array of physical symptoms which are similar to those present in the most dreaded acute emergencies (i.e., myocardial infarction, pulmonary embolism, stroke, congestive heart failure, and dissecting aneurysm) and, therefore, extensive work-ups are often necessary to rule out these serious illnesses. Mukerji, et al., (1987) found that 57% of patients who underwent cardiac catheterization and were found to have normal coronary arteries experienced symptoms of panic disorder. Tim was a typical patient with chest pain and shortness of breath and enough risk factors to require a cardiac evaluation. Upon evaluation, however, Tim had a negative treadmill.

Other physical medical conditions which can mimic panic and anxiety disorders include hyperparathyroidism, acute intermittent porphyria, multiple sclerosis, myasthenia gravis and pheochromocytoma. In addition, consideration should be given to substance abuse and medication reactions. The most common medications which mimic these disorders include excess thyroid replacement, theophylline, steroids, caffeine-containing compounds, sympathomimetics and anticholinergic agents.

## Alcoholism

George, a 46-year-old white male, was diagnosed with hypertension two years ago. Initially his physician advised a restrictive diet, a 10-pound weight loss and moderate exercise. Despite compliance with these recommendations and experimentation with several different antihypertensives at increasing doses, his blood pressure remained moderately elevated, with diastolic in the upper 90s. Eventually a careful history revealed that he was drinking a six-pack of beer a day and that his father was an alcoholic. His hypertension came under control when his physician convinced him to quit drinking.



Ten million Americans are alcoholics, and another eight million suffer the indirect effects of alcohol abuse and dependence by close friends or family members (Magruder-Habib, Durand & Frey, 1991). In studies of adults who seek medical care, it has been estimated that almost one-third have an alcohol problem (Magruder-Habib et al., 1991; Rubenstein & Federman, 1993; Saunders & Conigrave, 1990), and only about 20–50% of these patients are diagnosed (Ziring & Adler, 1991). Costs of alcohol abuse in 1990 were estimated at \$136 billion, attributable to direct health care expenditures, accidents, violence and lost productivity (Rubenstein et al., 1993). These staggering figures make alcohol abuse a profoundly important health problem in this country.

**Diagnostic Criteria.** The National Council on Alcoholism and Drug Dependence and the American Society of Addiction Medicine developed a working definition of alcoholism:

Alcoholism is a primary, chronic disease with genetic, psychosocial, and environmental factors influencing its development and manifestations. The disease is often progressive and fatal. It is characterized by impaired control over drinking, preoccupation with the drug alcohol, use of alcohol despite adverse consequences, and distortions in thinking, most notably denial. Each of these symptoms may be continuous or periodic (Rubenstein et al., 1993).

This definition reduces the criteria contained in the DSM-III-R, The National Council on Alcoholism (NCA) and the World Health Organization's 10th edition of *International Classifica-*

*tion of Diseases* (ICD-10) into four basic concepts: impaired control, preoccupation, adverse consequences and denial.

The key to the diagnosis of alcoholism, or any other drug abuse, remains the physician's index of suspicion. Clues to this diagnosis may include family and social history, somatic complaints and other physical signs, laboratory data and screening questionnaires.

Family and social history provide important information regarding a patient's degree of risk for alcoholism. The following questions may provide important clues about the presence of alcoholism: Does the patient have a family history of alcoholism or a history of moral constraints about alcohol use? Was the patient raised in a dysfunctional family? Does the patient have female relatives with a history of depression? Is the patient a heavy smoker, unemployed, divorced or single, employed as a bartender, or addicted to any other substance? Has the patient been arrested for DUI or disorderly conduct, or does he/she have a history of violent behavior, marital discord or problems at work? When George's hypertension proved to be refractory, his physician became suspicious of alcoholism and became more persistent in reviewing his background. Eventually, George's family history revealed an alcoholic father, and his social history revealed current average intake of six beers per day.

The alcoholic patient may present with a variety of somatic complaints, including repeated minor traumas, palpitations, anxiety, sleep disturbances, depression, dyspepsia, nausea, diarrhea or impo-

TABLE 5  
SHORT MICHIGAN ALCOHOLISM SCREENING TEST (SMAST)

1. Do you feel you are a normal drinker? (By normal we mean you drink less than or as much as most other people.) (No)
2. Does your wife, husband, a parent, or other near relative ever worry or complain about your drinking? (Yes)
3. Do you ever feel guilty about your drinking? (Yes)
4. Do friends or relatives think you are a normal drinker? (No)
5. Are you able to stop drinking when you want to? (No)
6. Have you ever attended a meeting of Alcoholics Anonymous? (Yes)
7. Has drinking ever created problems between you and your wife, husband, a parent, or other near relative? (Yes)
8. Have you ever gotten into trouble at work because of drinking? (Yes)
9. Have you ever neglected your obligations, your family, or your work for two or more days in a row because you were drinking? (Yes)
10. Have you ever gone to anyone for help about your drinking? (Yes)
11. Have you ever been in a hospital because of drinking? (Yes)
12. Have you ever been arrested for drunken driving while intoxicated, or driving under the influence of alcoholic beverages? (Yes)
13. Have you ever been arrested, even for a few hours, because of other drunken behavior? (Yes)

Answers in parentheses are "positive" responses.

**Scoring Key:**

Number positive responses	Interpretation
0–1	non-alcoholic
2	possible alcoholic
3–13	probable alcoholic

Selzer, M.L., Vinokur, A. & van Rooijen, L. (1975). A self-administered short Michigan Alcoholism Screening Test (SMAST). *Journal of Studies on Alcoholism*, 36, 117–26.

tence. These complaints, paired with positive family histories, should raise the physician's suspicion and lead to a more careful, aggressive examination for early physical signs of alcohol abuse. These signs include, but are not limited to, tremulousness, tachycardia, conjunctival injection, hypertension, erythematous palms, prominent bruising, spider nevi and decreased reflexes. George's elevated blood pressure and his unresponsiveness to treatment were important signs of alcohol abuse.

Laboratory data may provide clues to heavy alcohol use, but are not to be considered pathognomonic for alcoholism. A blood alcohol level provides information about present alcohol consumption. Daytime presence of alcohol in the blood may reveal morning drinking, while extremely high levels at any time may indicate tolerance. Elevated AST, ALT or GGTP should prompt further study, and an elevated mean corpuscular volume (MCV) may be a clue to long-term use.

Screening tests and questionnaires may be helpful in the detection of alcoholism. There are several effective screening methods. The most common are the Michigan Alcoholism Screening Test (MAST) and the CAGE questionnaire. The MAST is a 25-item questionnaire that can be administered to both the patient and his or her significant other for corroboration. This test is very sensitive, but somewhat lengthy for routine screening. A shortened 13-question form (SMAST; Selzer, Vinokur, van Rooijen, 1975) may offer an optimum combination of sensitivity and brevity (Table 5).

The CAGE test (Ewing & Rouse, 1970) is a quick and simple four-item questionnaire which can be easily incorporated into every patient's history and physical exam (Table 6). CAGE is an acronym for the four questions used, and is an adequately reliable screening test (Ziring & Adler, 1991).

*Medical Conditions Associated with Alcoholism.* Alcohol is a toxin which affects virtually every organ system in the human body. Acute intoxication or withdrawal symptoms can affect the nervous system by causing Wernicke-Korsakoff, cerebellar degeneration, encephalopathy and peripheral neuropathies. Common cardiovascular problems resulting from alcohol abuse include arrhythmias, cardiomyopathy, or worsening hypertension or angina. Gastrointestinal complaints are extremely common in alcoholic patients: gastritis, dyspepsia and diarrhea may be present prior

TABLE 6  
CAGE QUESTIONNAIRE

1. Have you ever felt that you should Cut down your drinking?
2. Have you ever been Annoyed by criticism of your drinking?
3. Have you ever felt Guilty about your drinking?
4. Do you drink in the morning (Eye opener)?

A positive response to two questions suggests alcoholism. Likelihood increases with additional affirmative responses.

Ewing, J. & Rouse, R. (1970). Identifying the Hidden Alcoholic. Presented at the 29th International Congress on Alcoholism and Drug Dependence, Sydney.

to the development of more serious conditions, including pancreatitis, gastrointestinal bleeding and cirrhosis.

Other organ systems may be affected by heavy, chronic alcohol abuse with less life-threatening consequences, and such results provide further clues to alcohol abuse. Warning signs may include decreased albumin and magnesium, and increased lipids. In addition, a decrease in the plasma testosterone (and occasionally the size of the testicles) resulting in subsequent impotence may occur. Finally, thrombocytopenia, coagulopathies, myopathies and osteoporosis are sometimes clues in patients who abuse alcohol.

### Summary

Over one-quarter of patients seen in primary care outpatient settings have some type of psychiatric disorder. The patient often is unable to comprehend the problem or, in the case of substance abuse, is unwilling to admit to or communicate about the problem with the physician. Therefore, the burden for diagnosis falls on the physician, sometimes without significant input from the patient.

Physicians may benefit numerous patients by actively searching for clues to the presence of psychiatric disorders. By providing timely and accurate diagnoses, primary care physicians can play an integral part in the treatment of psychiatric disorders, thereby reducing the morbidity and mortality of these disorders.

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(Continued on page 245.)



# Practical Psychopharmacotherapy for the Non-Psychiatrist

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**M**ost patients with psychiatric problems initially present to primary care physicians with the complaint of not feeling well in some physical sense. Fortunately, primary care physicians can treat the majority of such patients very capably. Such care may range from simple recognition and reassurance to psychotherapy and the use of drugs.

The purpose of this article is to discuss considerations in drug therapy of psychological problems by the primary care physician. In addition, the use, selection, and evaluation of drugs in relation to common psychiatric disorders (anxiety and sleep, mood, psychoses, and attention deficit) will be discussed.

## Considerations in Drug Therapy

Physicians should be attentive to several considerations in making decisions about drug therapy. These include the psychiatric illness being treated, the patient's medical history and present health status, any history of substance abuse, the various drug side effect profiles, and the potential need for counseling in conjunction with drug therapy.

A physician's decision to use drug therapy should be preceded by a careful evaluation of the patient by standard history and physical examination in order to minimize the risks associated with potent psychotropic drugs. Any evidence that the patient may have impairment in the ability to metabolize or excrete the chosen drug will greatly influence drug selection.

Drug-seeking patients are a problem in many physicians' daily practice. They may range from the anxious worker who sees a tranquilizer as a way of dealing with a difficult loss, to the addicted patient who presents with a headache which "only responds to Demerol." Fortunately, there are FDA guidelines for the legitimate use of drugs

which make treatment easier with less worry about substance abuse.

Physicians are responsible for providing their patients with a clear description of common side effects and the expected action of the drug. A common misconception exists that by naming the side effects, a physician will induce them. Even though this may be a legitimate concern with an anxious patient, the description of effects and side effects generally will provide the patient with reassurance of the safety of the drug and what is to be expected. Providing the patient with a side effect profile often reduces the number of patient calls to the physician's office, and the incidence of patient noncompliance.

Studies show strong evidence that, in most cases, drug therapy is most helpful when combined with counseling. The addition of counseling to drug therapy may prevent drugs from being a form of avoidance or denial for the patient. In addition, counseling may shorten the course of the medication and do more toward alleviating long-term suffering than a medication regimen alone.

## Psychiatric Disorders and Drug Therapy

*Anxiety and sleep disorders.* The most common psychiatric disorder seen in the primary care office is anxiety (Shader & Greenblatt, 1993). Anxiety may present with a wide variety of manifestations, from simple performance anxiety to severe disabling phobias. The anxiety disorders tend to be chronic and disruptive, and often present with a recognition by the patient of the need for some means of coping with immobilizing fear. The most commonly used drugs to treat anxiety are the benzodiazepines, which have basically supplanted older drugs such as the barbiturates and meprobamate. Other drugs commonly used to treat specific anxiety disorders include buspirone, the tricyclics, the monoamine oxidase inhibitors, and even some sedative antihistamines.

The benzodiazepines differ from one another chiefly in their duration of action and in the pres-

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ence of active metabolites. While there may be definite differences in patient response to different drugs in this class, most of those relate to the above characteristics. In general, especially when dealing with older patients, it is best to choose a product with a relatively short half-life and no active metabolites. This is because the most common side-effects of this class are sedation and confusion, even to the extent of a toxic delirium when accumulation of the drug occurs.

When treating sleep disorders, a history of the type and duration of the sleep disorder will help to distinguish the compound most suited for that patient. Despite some negative publicity, triazolam (Halcion) may work very well in patients who have a sleep-onset disorder. On the other hand, patients who have trouble remaining asleep long enough to get a restful night's sleep may do better with a slightly longer-acting agent such as oxazepam (Serax), temazepam (Restoril), alprazolam (Xanax), or lorazepam (Ativan).

In dealing with sleep disorder patients, it is important to evaluate the patient carefully for the presence of depression, since the benzodiazepines have been shown to exacerbate preexisting depression. In such cases, a tricyclic antidepressant or a selective serotonin re-uptake inhibitor may be more useful for both the sleep disorder and the depression. However, a longer-term, judicious use of benzodiazepines with a reasonably careful follow-up and withdrawal when necessary may be required for some patients experiencing generalized anxiety and panic disorders.

Buspirone (Buspar) is an important new anxiolytic drug which has become available over the last few years. Although it is more expensive than several alternatives, buspirone causes very little sedation and has a very favorable side effect profile. It is difficult to use in patients who have become tolerant to the sedative side effects of other drugs. Buspirone is especially useful for those patients who have never been on drug treatment, or who found the sedation of the benzodiazepines or their cognitive impairment to be intolerable. As with many other anxiolytic drugs, Buspar has also had a positive effect in patients with depressive symptoms.

Other drugs which have been used in the past for treatment of anxiety include barbiturates, meprobamate (Miltown or Equanil) and the tricyclics. In general, these drugs have fallen out of favor as drugs to use strictly for the treatment of anxiety. The barbiturates and meprobamate are similar in their capability of lethal effect in either

overdose or withdrawal, with the two syndromes sometimes difficult to distinguish. The tricyclics, on the other hand, have shown remarkable effect when combined with a short-acting benzodiazepine in the treatment of panic disorder or phobias (as have the monoamine oxidase inhibitors, though less frequently used by primary care physicians). However, the possibility of lethal overdose and of significant side effects still limits the use of these drugs. The antihistamines (hydroxyzine and diphenhydramine) are sometimes listed as being anxiolytic, but they are useful principally for sedation.

*Depression.* Another common psychological problem seen in primary care is depression. In many patients depression may be chronic and recurrent. It can be marked by pervasive sadness, a lack of enjoyment of previously sought-out activities, withdrawal from social interaction, and a loss of the belief that the illness or "bad feeling" will get better. The tricyclic antidepressants, monoamine oxidase inhibitors (MAOI's), serotonin re-uptake inhibitors, and buspirone are drugs commonly used to treat depression. When depression exists as part of bipolar disorder, lithium is the most common treatment drug, although other combination drugs can be used.

The tricyclic antidepressants have been the most common form of drug therapy for depression for over 30 years. Used judiciously, they are excellent drugs for some patients, although their safety profile has continued to be a problem. The efficacy of tricyclics has led to their widespread use and an expansion of their treatment indications in recent years. They are believed to act by preventing the re-uptake or breakdown of various neurotransmitters in the central nervous system. In major depressive episodes, these drugs have been shown to have a therapeutic effect in a majority of patients, requiring from 2 to 5 weeks to reach their maximum potential.

One disadvantage of the tricyclic antidepressants is that they may cause significant and possibly disabling daytime sedation. Anticholinergic side effects may limit their use, especially in men. The tricyclics may limit the ability to pass urine, blur distance vision, delay gastric emptying, and cause constipation, lethargy, and dry mouth with altered taste and smell. Such side effects may make these drugs unacceptable. In addition, since self-harm or suicide is a significant risk in depression, the lethal effect of these drugs in overdose is a constant concern.

Despite the problems associated with the use



of the tricyclics, the most common error in their use in primary care practices is in underdosage (Katon, Von, Lin, Bush, & Ormel, 1992). Evidence suggests that most adults will require dosages in the 100–200 milligram range for imipramine or amitriptyline for the treatment of depression.

Monoamine oxidase inhibitors (MAOIs) are less commonly used than tricyclics in treating depression, although with adequate precautions and dietary counseling they may be used with relative safety. The combination of certain pressor amines with MAOIs may cause elevated heart rate and blood pressure, raising the danger of acute stroke, MI, or other acute hypertension crises. The MAOIs can be very effective in those patients who seem resistant to the effects of the tricyclic antidepressants or who cannot tolerate their side effects. The MAOIs have also shown promise in the management of phobic disorders when less toxic agents fail.

Recently, new agents which are selective inhibitors of serotonin re-uptake have become available and promise to become a viable treatment for patients with depressive symptoms. These drugs have efficacy equivalent to the tricyclics in the treatment of depressive illness; however, their advantage is in the relative lack of side effects. Reports of headaches and anorexia have been associated with these agents, but rarely do the general side effects require withdrawal of the medication. One of the most positive effects of the serotonin re-uptake inhibitors is that they may have a clinical effect in less time than is normally expected with most antidepressant drugs. Clinical improvement may appear in as little as one week, in contrast to the usual 2½ to 3 weeks with other drugs.

Busiprone, more commonly used to treat anxiety, has been reported to have some treatment efficacy with depression and has been associated with very few side effects. Dizziness and some transient CNS stimulation have been reported with the high doses required (greater than 40 mg/day) to treat depression.

Patients who present with depression should be carefully screened for a history consistent with bipolar affective disorder (or manic-depressive illness). For patients with a bipolar disorder, the antidepressant drugs may be effective in the treatment of the depressive half of the disorder, but may trigger the onset of mania. Lithium is the most common treatment drug of choice for bipolar disorder and is usually given as  $\text{LiCO}_3$  with a dosage of 300 to 600 milligrams twice daily.

Careful follow-up is necessary, since lithium is known to have a significant effect on renal and thyroid function. Co-management is common in dealing with more serious disorders, and most primary care physicians refer to someone with experience in the use of this drug.

Some patients require the combination of an antidepressant for the depressive symptoms of bipolar illness with lithium used to control mania. Other combinations have been used, including phenothiazines and antidepressants. In addition to lithium, carbamazepine (Tegretol) has also proven useful in providing antimanic effects.

Interestingly enough, although the recommendation for the combination of medication and counseling is still useful in depression, if one or the other is to be used, medication alone is more likely to be successful in depression than in most other psychiatric diseases.

*Psychoses.* Psychotic patients require complex, ongoing care, and it is unusual to find primary care physicians comfortable with the independent treatment of such cases. Characteristics of psychotic disorders include impairments in thinking, emotional response, memory, communication, and the ability to interpret reality (Bernstein, 1984). An acutely ill psychotic patient will be unable to distinguish the objectively verifiable from the delusions which cripple his or her ability to function. It is very important to distinguish the acute onset of psychosis from organic or toxic delirium. Especially in the elderly, organic or drug-induced delirium is a common presenting sign of those thought to be mentally ill. Treatment drugs include the neuroleptics and clozapine.

The drugs of choice for treatment of psychoses are the neuroleptics, or so-called “major tranquilizers.” These drugs often are associated with significant side effects; however, considering the severity of the illness, the benefits associated with the neuroleptics seem to outweigh the risks. The most significant side effect is tardive dyskinesia, involving complex, involuntary movements which may not resolve even when the drug is withdrawn. No viable evidence exists to prove that any one of the neuroleptics is less likely to produce this syndrome (AMA, 1991). The other side effects vary along a spectrum between those labeled “low potency,” which have extrapyramidal side effects, and “high potency,” which produce sedative and autonomic side effects.

A relatively new drug, clozapine, seems to have no extrapyramidal side effects, and an apparently

reduced likelihood of producing tardive dyskinesia. However, clozapine is recommended only under very strict guidelines by the company because it seems to be associated with agranulocytosis.

Antipsychotic drugs are also sometimes used for agitation and disorientation in elderly nursing home patients. These drugs are effective for patients in reducing behavioral problems which may risk personal injury, or in increasing responsiveness to appropriate interventions. However, antipsychotic drugs carry a significant risk of over-sedation, orthostatic hypotension, and anticholinergic side effects. Therefore, their use should be limited to short-term treatment whenever possible.

**Attention Deficit Disorder.** Primary care physicians who care for children may find themselves in the position of treating attention deficit disorder (ADD). Formerly labeled hyperactivity, the preferred term now is attention deficit disorder with (or without) hyperactivity. The primary problem is thought to be the inability to block out inappropriate or extraneous stimuli in order to focus on the task at hand. Not all patients with ADD react with hyperactivity; some merely show an inability to function up to their apparent capacity in an environment which has distracting stimuli. Attention deficit disorder may persist into adulthood. Stimulant drugs and diet therapy are discussed as treatments for these disorders.

The use of stimulant drugs has been found to be of significant help in a large percentage of children with ADD, but there has been political and social controversy about their use. In general, starting with low doses of methylphenidate (Ritalin) and titrating up to the desired effect will show good results in terms of controlling the inability of the child to concentrate or focus on a given task.

Physicians must realize that the majority of children with ADD will have learned some dysfunctional behavior prior to being treated. Treatment of these behaviors will be made easier by the medication, but they will not resolve with medication alone. Other drugs or specific behavioral interventions may also be necessary to control specific dysfunctional behaviors.

Although the drugs used for hyperactivity stimulate norepinephrine and dopamine release by different mechanisms, their effects are to calm the patient. This effect is nonspecific and has been observed as well in normal children, so using these drugs to diagnose ADD is not warranted.

Diet therapy has also been advocated for treatment of ADD. The Feingold diet is essentially free of artificial colors and flavors that are purported to be causative. Large studies have not been encouraging, but there do seem to be some children with ADD who respond to this kind of diet. Diet therapy requires considerable effort on the part of the parents in its implementation and maintenance, and it is probably most useful in combination with drug and behavioral therapies.

## Conclusion

It is unrealistic for a primary care physician to be fully knowledgeable about all the psychoactive drugs and, generally speaking, it is unnecessary. More importantly, primary care physicians must realize that it is possible to diagnose and participate in the care of most of the psychiatric illnesses found in their practices. Physicians should become familiar with the drugs most commonly used in treating specific disorders, and use them judiciously with their patients. In addition, physicians should reevaluate both the diagnosis and therapy on a regular basis, especially when any psychotherapeutic drug is being used for treatment. Most patients will benefit from the combination of drug therapy and counseling. The primary care physician can provide limited counseling; however, co-management of the more severe disorders with a trained mental health professional is highly recommended.

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# Practical Office-Based Counseling Skills for the Primary Care Physician

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**P**hysicians see numerous patients with medical problems which are related to underlying psychological processes. In addition to diagnosable psychiatric disorders (e.g., anxiety, depression, and substance abuse), patients present with such problems as chronic pain, fatigue, noncompliance, family violence, and marital problems.

Physicians are in an ideal position to influence patients' behaviors. For example, numerous studies of smoking cessation have demonstrated that physicians can have a significant impact on patients' motivation to quit smoking (Schwartz, 1987). Physicians can therefore help patients become more adaptive, healthier individuals by participating in the treatment of their psychological problems. Nonetheless, physicians often neglect opportunities to provide psychological interventions.

Cognitive therapy, developed by Dr. Aaron T. Beck (1979), is a widely used, valid, time-efficient and practical method of therapy that is well suited for use in the physician's office. In fact, in a recent issue of *KANSAS MEDICINE*, Liese (1993) suggested that physicians could apply cognitive therapy to help patients cope with AIDS. In a review of the cognitive therapy literature, Beck (1993) reported cognitive therapy to be effective in the treatment of depression, anxiety, panic, eating disorders and more. This paper will present some components of cognitive therapy which make it useful for office-based counseling. These components include collaboration, case conceptualization, and guided discovery.

Sarah is a 68-year-old woman who lives with her daughter, son-in-law, and grandchildren. She presents to her physician with chest pain for which no organic cause can be found. She admits that her pain is most pronounced when "my family leaves me home alone."

Melissa is a 24-year-old college student who reports disabling fatigue during final examination week. Despite her

physician's reassurances that she has no infectious disease, she insists: "This must be physical because I'm not crazy."

Scott, a 37-year-old electrician, was involved in a car accident several years ago while driving under the influence of alcohol. At the present time he states that his lower back "is in constant pain." He claims that "only some pain pills" (i.e., narcotics) make him feel better.

The above case studies are presented to illustrate the processes and interventions involved in some common psychological disorders.

## Overview of Cognitive Therapy

Cognitive therapy assumes that individuals' emotional, behavioral, and physiologic processes are mediated by their basic beliefs and automatic thoughts (see Figure). Beliefs and thoughts which are positive (i.e., realistic and objective) tend to result in positive emotions and behaviors. Examples of positive basic beliefs include "I am worthwhile" and "I am lovable." In contrast, negative beliefs and thoughts tend to lead to maladaptive feelings and behaviors. Examples of negative basic beliefs include "I am inadequate" and "I am unlovable."

People develop *basic beliefs* early in life. For the most part, these basic beliefs lie dormant until they are activated by *critical incidents*. Critical incidents might include problems in an individual's marriage, health, career, and so forth. When basic beliefs are activated, they manifest themselves as *automatic thoughts*. Automatic thoughts are spontaneous abbreviated versions of basic beliefs. Examples of automatic thoughts might include "I'm so stupid!" or "I can't stand this!" Such automatic thoughts as these determine individuals' *behaviors, emotions, and physiologic responses*.

Anxiety, depression, and substance abuse are common problems presented to the physician. Each of these disorders can be well understood from the framework of cognitive therapy. The case examples presented previously are used to illustrate the cognitive processes involved in anxiety, depression, and substance abuse.

Physicians frequently encounter patients suffer-

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ing from anxiety. Sarah experiences anxiety when she anticipates being alone. She has always been a nervous individual who has tended to worry incessantly. Corresponding with her anxiety, Sarah has the thoughts: "I'm extremely fragile;" "I am weak and vulnerable." Currently she believes: "If I am left alone something terrible is likely to happen to me." As a result of these negative thoughts, she becomes extremely emotionally aroused (i.e., anxious) and she experiences chest pain.

Depression is another common problem seen in the primary care physician's office. Melissa's depression is manifested as fatigue. Her thoughts include: "I'm not worthwhile unless I do well in school"; "I was never good in school, so I shouldn't be here in the first place"; and "I'm going to fail, so what's the use." These automatic thoughts paralyze her, leading to procrastination and depression. The vicious cycle continues and eventually she spends most of her time in bed.

At least one in four patients visiting primary care physicians are addicted to psychoactive substances (including alcohol, nicotine, illicit or prescription drugs.) Scott abused drugs and alcohol while in college. His abuse generally resolved after college; however, his auto accident (a crisis) acted as a trigger for his subsequent substance abuse. Scott's automatic thoughts included: "I can't possibly tolerate pain without drugs"; and "My physician should be able to stop my pain immediately." Scott's refusal to take responsibility for his rehabilitation and his current drug problem further perpetuated this problem. Beck, Wright, Newman and Liese (1993) have recently applied cognitive therapy to the treatment of substance abuse.

### Cognitive Therapy in the Physician's Office

The goal of cognitive therapy (CT) is to help individuals develop objective, healthy thinking processes which should result in adaptive feelings and behaviors. The components of effective CT are: physician-patient *collaboration*, an accurate *case conceptualization*, and the effective application of *guided discovery* (Liese, 1993).

**Collaboration.** Effective collaboration pertains to the ability of the physician and patient to work together in a productive manner. Collaborative physicians express *accurate empathy*, *unconditional positive regard*, and *genuineness* with their patients, and also engage in *active listening*.

Accurate empathy is defined as an understanding of the patient's thoughts and feelings regard-

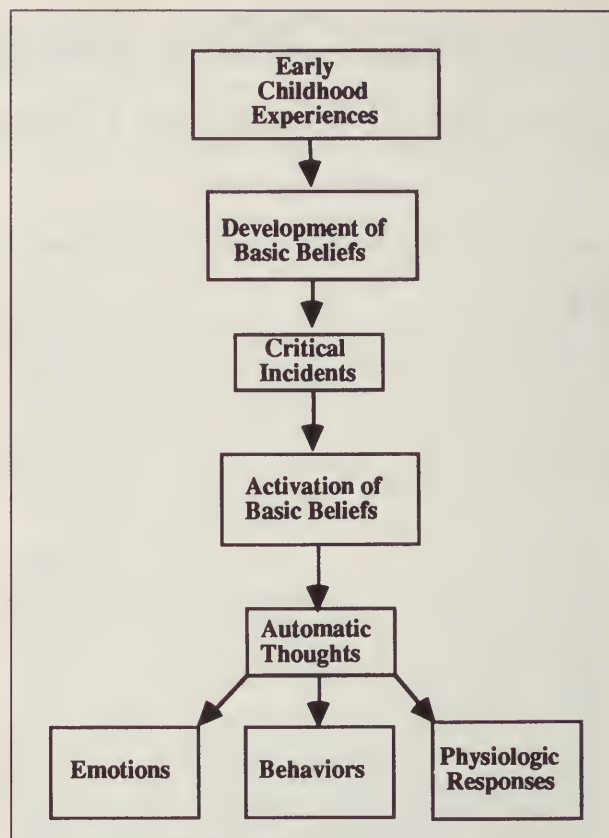


Figure 1. The cognitive model.

ing his or her problems. Empathy is a learned skill, in contrast with sympathy, which is an emotional response to a patient's situation (Brock & Salinsky, 1993). Unconditional positive regard refers to the physician's full acceptance of the patient as a person in spite of his or her differences in behaviors, attitudes, and values. Genuineness is expressed in the physician's sincerity and spontaneity.

The physician must also engage in "active listening" in order to facilitate collaboration. Active listening includes both attending and verbal behaviors. Attending behaviors are non-verbal behaviors which signal the patient that the physician is paying attention and include attentive posture, eye contact and verbal following. Effective verbal interviewing skills for the physician include the use of minimal encouragers (e.g., "Go on."), open questioning (e.g., "How does that make you feel?"), reflection (e.g., "You seem terribly distraught about your grades."), and restatement (e.g., "So this loss has affected your general self-worth").

**Case Conceptualization.** Another essential component of CT is the case conceptualization



(i.e., the development of an accurate, comprehensive understanding of the patient). The case conceptualization consists of at least three important steps: the establishment of a DSM-III-R diagnosis (APA, 1987), a developmental profile, and a cognitive profile.

The DSM-III-R provides a multiaxial system of psychiatric diagnosis. Axis I (acute psychiatric syndromes) and Axis II (chronic personality disorders) are particularly important in the development of the case conceptualization. (See the article on page 231 for more details.) A physician must carefully assess the existence of a DSM-III-R disorder in order to accurately understand and treat the patient. The diagnostic criteria of DSM-III-R enable the physician to distinguish between "normal" and "pathological" cognitive, behavioral, and emotional processes.

The developmental profile involves the collection of data about the patient's history (e.g., family, social, vocational, economic) as it relates to his or her current psychological status. In a continuous, long-standing physician-patient relationship, the physician will be somewhat familiar with this information, have developed a relationship with the patient and his family, and know much of the context of the current problem. In order to elicit information regarding the patient's thought processes, the physician might phrase developmental questions in the following way: "What messages did you receive when you were younger about \_\_\_\_\_?" With Melissa, who appears clinically depressed, the physician might ask, "What messages did you receive when you were younger about your self-worth?" If the patient feels anxious, as in the case with Sarah, the physician might ask, "What messages did you receive about taking risks?" or "What messages did you receive about being on your own?"

The cognitive profile assesses how the patient thinks and feels about himself or herself. In particular, the physician is encouraged to ask such questions as, "What are your thoughts about yourself, generally?" "How would you describe your self-esteem, presently?" "What types of situations (i.e., critical incidents) tend to make you feel upset?" "When you are upset, how do you cope (i.e., react behaviorally)?"

To summarize, the case conceptualization (i.e., ascertaining a diagnosis, developmental profile, and cognitive profile) is facilitated by the continuity of care inherent in primary care medicine. After the case conceptualization is well developed, the physician is encouraged to discuss this informa-

tion with the patient in order to provide a greater understanding of his or her functioning.

*Guided Discovery.* Cognitive therapy techniques are designed to modify patients' maladaptive thoughts, feelings and behaviors. The key to office-based counseling is adapting techniques that can be applied effectively in a brief period of time. There are hundreds of cognitive and behavioral techniques associated with CT; however, this article will focus on the most basic technique: guided discovery. This technique easily adapts to brief office visits.

Guided discovery is an interview process which enables both the physician and patient to gain insight and understanding regarding the patient's psychological and behavioral functioning. This method of interviewing requires that the physician ask open-ended, thoughtful, and exploratory questions. The physician also reflects (i.e., paraphrases) what the patient says, both verbally and non-verbally. These techniques (open-ended questions and reflection) allow the patient to gain a more objective, adaptive perspective on his or her problems. While it is most tempting for the physician to give simple advice and reassurance to patients with psychosocial problems, patients will be more likely to make cognitive and behavioral changes when they are guided to learn new ideas for themselves.

The following dialogue between Scott and his physician occurs when the physician realizes that Scott has an addiction problem. This dialogue is presented to illustrate guided discovery.

Dr.: How are you feeling today? (open question)

Scott: I'm in a lot of pain.

Dr.: You seem quite upset by your pain. (reflection) How does your pain affect you on a daily basis? (open question)

Scott: I can't function with this pain.

Dr.: What do you mean by you can't function? (open question)

Scott: I can't do any of the things that I used to do unless I take pain pills to ease the pain.

Dr.: You're obviously hurting a lot. (reflection) What have you done in the past to deal with pain? (open question)

Scott: Well, I used to do more recreational things.

Dr.: What do you mean by recreational? (open question)

Scott: You know: fishing, baseball games. That kind of thing.

Dr.: So you have withdrawn from your favorite activities. (reflection)

Scott: Yeah. I don't want to get more hurt.

Dr.: And how do you know it would hurt more? (open question)

Scott: I guess I don't. Maybe it would even help.

Dr.: Perhaps we can plan some "safe" activities together. (reflection)

Scott: That might help.  
 Dr.: So how do you feel when you think about doing those activities? (open question)  
 Scott: A little better, maybe I do have more control over my pain than I thought.

In this dialogue, the physician has helped Scott regain some personal power by allowing him to think of other ways to deal with his pain. In reality, the physician may be tempted to flatly refuse Scott's request for drugs and provide advice about, or solutions to, Scott's problems. However, the use of guided discovery (including open-ended questions and reflection) facilitates the patient's ability to discover his own positive thoughts, resources, and strengths.

The *three-question technique* is a specific form of guided discovery. In the three-question technique, the physician asks a series of three open-ended questions in order to help the patient revise his or her negative thinking. Again, it may be tempting for the physician to reassure and advise the patient of ways to feel better; however, advice and reassurance are typically ineffective. The three questions tend to help the patient to discover alternative ways of viewing situations (i.e., more objectively). Thus, after it is determined that the patient has a negative, distorted thought, the physician might ask: (1) What *evidence* do you have for that thought?; (2) *How else* can you look at the situation?; and (3) If the thought is true, what are the *implications*?

For an illustration of the three-question technique, consider the following dialogue between Sarah and her physician.

Dr.: Sarah, you told me a few minutes ago that you are afraid that your family is going to leave you. (reflection) What is your evidence for that belief? (open question)  
 Sarah: I don't have any *evidence*. I just feel that way.  
 Dr.: You 'just feel that way.' (reflection) *How else* could you look at the situation? (open question)  
 Sarah: Well, they probably have no intentions of really leaving me . . . you know, forever.  
 Dr.: If, in fact, they did leave, what would the *implications* be? (open question)  
 Sarah: I guess I could go and live with my sister. She's offered to have me stay in the past.

In this very brief guided discovery, Sarah's physician helps her to become more objective about her anxiety. In fact, when Sarah is helped to think more objectively, she feels relief.

The *weekly activity schedule* is a behavioral method designed to help patients with psychosocial problems. Even this method requires the skillful use of guided discovery. Specifically, the physician requests that the patient keep an hour-by-

hour record of activities for a specified period of time (e.g., one week). At the end of that time, they review the patient's activities. By means of guided discovery, they highlight activities which relate to the patient's emotional distress. Consider a dialogue which takes place between Melissa and her physician.

Dr.: Well, Melissa, how did you do on your weekly activity schedule? (open question)  
 Melissa: Fine, I think. Here is my calendar for the week. "They both look at Melissa's completed weekly activity schedule."  
 Dr.: What did you learn from this schedule? (open question)  
 Melissa: I waste a lot of time.  
 Dr.: What do you mean you "waste a lot of time"? (open question)  
 Melissa: I worry a lot that I can't do what I have to do, and then I procrastinate, which only makes me feel worse.  
 Dr.: So procrastinating makes you feel worse? (reflection)  
 Melissa: Yeah. It becomes a cycle and then I just want to sleep.  
 Dr.: So putting things off made you feel worse. (reflection) What things made you feel better? (open question)  
 Melissa: Well, the few days that I did study I had more energy.  
 Dr.: So what do you think about that? (open question)  
 Melissa: Maybe I should just get down and work on passing my finals.  
 Dr.: I think that's a good idea. Let's try this assignment again for next week, trying to increase your time spent studying.  
 Melissa: Okay, I'll try studying for at least three hours a day.

Gaining a better understanding of Melissa's current activities allows the physician and patient, collaboratively, to plan a more productive schedule for Melissa. Melissa's heightened awareness of how she spends her time allows her to complete her studies and have more time for other, more pleasurable, activities. Melissa continues to monitor her activities, and she and her physician review the schedule in follow-up visits.

## Conclusion

Physicians can, in fact, provide counseling to their patients. Office-based counseling techniques are most effective when they are based on a collaborative relationship and an accurate case conceptualization. Furthermore, the use of guided discovery is vital to the success of most cognitive and behavioral strategies. Unfortunately, space limitations prohibit an extensive, detailed review of other techniques. For more information about cognitive therapy, see the texts by Dr. Beck and his



colleagues on depression (1979) and substance abuse (1993).

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(Continued from page 236.)

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# Mental Health Issues in Rural Settings

DONALD E. NEASE, JR., M.D., *Galveston, TX*

**F**resh air and a slower pace of life in rural areas are often thought to contribute to a healthier lifestyle that is free from the stresses of urban settings. The idea of rural areas being stress-free is an exaggeration. Just as urban areas have their own stressors, rural areas have stressors which can contribute to the occurrence of mental illness.

It has been difficult to determine whether less mental illness exists in rural areas than in urban areas. Srole<sup>1</sup> examined this issue by comparing the prevalence of mental illness in an urban and rural setting, and found a higher incidence of mental illness in the rural setting. In contrast, Mueller<sup>2</sup> reviewed several studies that compared the rates of mental illness in urban and rural areas. A recent study of three rural family physicians' practices in Kansas found that only 1.5% of the presenting complaints and 1.9% of diagnoses were for psychological problems.<sup>3</sup> Despite the difficulties in comparing the prevalence of mental illness in rural and urban areas, certain risk factors in rural areas may contribute to the occurrence of mental illness. These include: isolation, economics, proximity of the work and home settings of farm families, and stigma associated with mental illness in rural areas.

The purpose of this article is to describe each of these risk factors associated with rural life, provide a national and state perspective on the topic, and discuss the role of rural physicians where mental illness is concerned.

## **Risk Factors for Mental Illness in Rural Areas**

*Isolation.* Isolation in rural areas can contribute to the development and continuance of mental illness. Geographic distance from health care providers, specifically mental health care providers, may prevent timely access to care following the onset of mental illness.

Social isolation may also pose a risk for mental illness in rural areas. Donham and Horvath,<sup>4</sup> in

their review of agricultural occupational medicine, identified the lower level of social and interpersonal support in some rural areas as a possible risk factor for mental illness. Barton, et al.,<sup>5</sup> compared the incidence of suicide in Minnesota for the years 1967 through 1973. They found that during these years, suicide increased by the greatest percentage in urban populations, with the exception of rural women aged 45-64. These rural women experienced an 87% increase in the incidence of suicide during that period. The authors attributed this increase to unique problems women in this age group might experience due to geographic isolation and other social barriers.

*Economics.* Economic events may greatly influence the incidence of mental illness in rural areas. The economic health of rural areas may be affected by faraway events and political decisions. Adverse economic events have recently affected the rural and farm economy, resulting in a dramatic effect on lifestyles and often resulting in the loss of jobs. Along with faraway events, farm-related stressors such as machinery breakdown, crop failure, and livestock disease and death directly affect the livelihood of farmers. These events, whether close to home or around the world, are often beyond the control of the persons they affect, and can create financial burdens at unexpected times in rural communities.

One study surveyed Iowa farmers, who ranked farm work-related stressors, such as machinery breakdown or loss of livestock, along with more commonly identified stressors such as death of a spouse or close family member.<sup>6</sup> These farm work-related stressors ranked close behind the stressors of personal loss. This ranking may reflect the economic importance of these farm work-related stressors, and serves to illustrate how farm stressors may present a risk for mental illness.

*Proximity of the farm work and home settings.* The farm environment itself can be stressful for not only the reasons cited above, but also because the farm is a place where work and home settings are in close proximity. This is in contrast to most other occupations in which work is performed at a site distant from the home. Persons engaged in

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farm work may not be able to distance themselves at the end of the day from emotional stressors related to their work.

Farm families may also experience additional stress because of the intermingling of work and home environments. Donham and Horvath commented on this issue, stating, "the farm family unit is also a business unit which lives and works together day after day."<sup>4</sup> Farm wives may be especially at risk because of the stress associated with the conflicts between the role of spouse and business partner.

Berkowitz and Perkins<sup>7</sup> surveyed married women on dairy farms in New York State to examine the relationships between stress and the presence of role conflict, husband support and degree of home and farm task load. They found that role conflict in farm women was greater when husband support was lacking. The authors concluded, "the degree of involvement in different roles and the potential conflicts between them may not be as important as the 'psychological climate' in which role duties are performed." Therefore, the potential for role conflict may be lessened in a supportive family environment.

*Stigma associated with mental illness in rural areas.* An additional risk factor for mental illness in rural areas may be stigma. Persons living in rural communities, because of their small size and lack of social diversity compared to urban areas, may experience more pressure to conform than in urban communities. The pressure to conform may result in stress, and also prevent persons from seeking help after mental illness develops.

Rost, et al.,<sup>8</sup> studied the stigma attached to persons with depressive disorders in both urban and rural populations. Rural residents labeled persons who sought help for depressive disorders more negatively than urban residents. Rural residents were also less likely to seek professional help as the labeling became increasingly negative.

The authors also examined these issues after taking into account the level of education. When level of education was considered, urban and rural residents labeled persons seeking help for depressive disorders similarly. In contrast, rural residents remained less likely than urban residents to *seek* professional help when negatively labeled, even after considering level of education. The authors speculated that a greater flow of information through social networks in rural areas may result in persons being fearful of being labeled by the entire community rather than by a small subset of people.

## National Perspective

As previously mentioned, studies examining the epidemiology of mental illness in rural areas have yielded conflicting results. However, the National Institute for Mental Health (NIMH) and the National Mental Health Association (NMHA) recently have been quite active in studying this issue. In 1986, NIMH and the Council of State Governments cosponsored a policy forum on rural mental health. This forum recommended the formation of a national commission on rural mental health, and in 1987 the NMHA formed such a commission to study the mental health issues relating to rural life.

The NMHA commission concluded that rural areas had been heavily affected by the social and economic changes of the 1980s, which resulted in serious implications for the mental health of rural residents. The commission developed 18 recommendations for health policy that include focus on funding, research, public education, professional education and service delivery priorities.<sup>9</sup>

## A Kansas Perspective

A literature review failed to find any studies on the prevalence of mental illness in Kansas. As previously mentioned, a recent study of three rural family physicians' practices in Kansas found that only 1.5% of the presenting complaints and 1.9% of diagnoses were for psychological problems.<sup>3</sup> These low figures may reflect the reluctance of rural residents to seek help for mental illness.

The mental health of elderly persons in rural areas of Kansas was evaluated in a study conducted by Scheidt<sup>10</sup> in 1984. Scheidt surveyed approximately 1,000 elderly residents of 18 Kansas communities with populations of 2,500 or fewer. Several subjective, psychological, and health status measures were used to characterize and determine the degree of well-being of the subjects.

Scheidt classified subjects with the highest level of mental and physical well-being as "partially engaged" and described them as having "fewer home visits with friends and relatives but engaged in several formal and informal town activities." Scheidt also commented, "About four out of five reported having a confidant with whom to share problems, and most were satisfied with opportunities to develop meaningful relations with others in town."

Scheidt classified subjects with the lowest mental and physical well-being scores as "frail." Ac-

cording to Scheidt, "These individuals tended to be less satisfied with opportunities to form friendships and with the friendliness of their neighbors than did those in other categories." Scheidt concluded that lack of social contact may serve as a marker for individuals at risk for mental illness. This highlights the role of geographic and social isolation in rural areas of Kansas.

### Role for Rural Health Care Professionals

Rural physicians and other health care professionals should be aware of risk factors in rural areas that may contribute to mental illness. As discussed, these include isolation, economics, proximity of farm work and home settings, and the stigma associated with mental illness. Examination of these risk factors reveals the stereotype of rural life as being "stress-free" to be a myth. Donham and Horvath<sup>4</sup> described farmers as being "typically stoic and independent." This quality of farmers may apply to other rural residents, and may make prevention and treatment of mental illnesses more difficult.

Knowledge of the risk factors for mental illness that are present in rural areas may assist rural health care providers in designing identification and intervention strategies for mental illnesses. Rural physicians may screen their patients for the presence of social isolation, family stress or economic hardship, and for their attitudes regarding mental health. Because of the attitudes toward mental illness in rural areas, interventions designed for individuals alone may be unsuccessful. Health care professionals may need to direct interventions at the community and family as well.

For example, educational efforts to combat the stigma of mental illness could be carried out with farm, community and civic organizations, as well as with individual patients. Similarly, issues of role conflict that are experienced by farm wives may require counseling of both husband and wife. Effective mental health interventions in rural areas, where specialists are not locally available, may also require a team approach using the physician, nurse and social worker.

Health care professionals should also be aware

that they may be viewed with suspicion when addressing farm-related issues in community settings. For this reason, it may be helpful to enlist the cooperation of local farm experts such as the agricultural extension agent. Joint talks with extension personnel on farm stressors at events such as the local Farm Bureau meeting can help demonstrate the physician's interest and credibility.

### Conclusions

In summary, rural areas are no more stress-free than urban areas. Some of the risk factors for mental illness in rural areas are unique to the rural setting and may require unique identification and intervention strategies. However, rural physicians and other health professionals, with knowledge of the risk factors discussed and using approaches directed at community, family and individual levels, can successfully identify persons and families at risk for mental illness in rural areas.

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# Tetanus in Kansas, 1993

**T**he first case of tetanus in Kansas since 1987 was reported in May of this year from Sedgwick County. The patient was an 82-year-old white male who had never received tetanus toxoid. On May 14, he fell in his garage and injured his right elbow on a bicycle pedal. The wound consisted of an abrasion with a small avulsion. No medical treatment was sought for the injury. The patient cleaned and bandaged the wound at home.

The following day the patient noted increasing difficulty with chewing and did not feel well. On May 16 he had myalgias and was unable to get out of bed. He was admitted to a hospital with respiratory distress, at which time he was given one dose of tetanus-diphtheria toxoid (Td) and 250 units of tetanus immune globulin (TIG).

The patient subsequently developed generalized tetany and required ventilator support. During the course of his hospitalization he suffered numerous complications (i.e., renal failure, pneumonia, coma). However, he survived and was discharged on June 23 to continue his rehabilitation as an outpatient.

This is the sixth case of tetanus reported in Kansas during the last 10 years (Figure 1). The median age of the Kansas cases was 76 years (range 43–82). During 1989–1990, the last period for which national data are available, 58% of patients with tetanus were  $\geq 60$  years of age. The risk of tetanus in persons  $>80$  years of age was

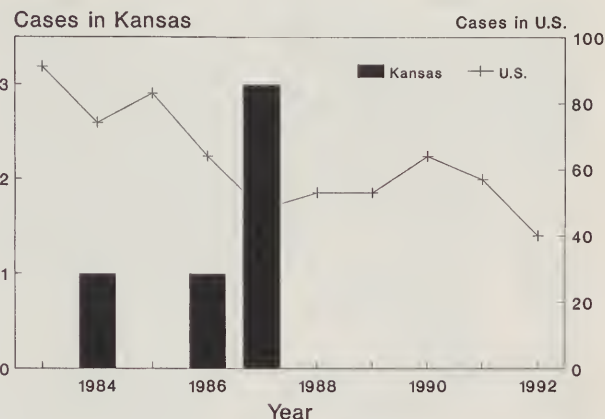


Figure 1. Tetanus in Kansas and the U.S., 1983-1992.

more than 10 times the risk in persons 20–29 years of age. The case-fatality rate also increased with age from 17% in persons 40–49 years of age to 50% in those  $\geq 80$  years of age. Sixty percent of the patients with tetanus had never received tetanus toxoid, 19% had received one or two doses, and 14% had received a complete 3-dose series, but the last dose was  $>10$  years before onset. Sixty-eight percent of patients who had acute injuries did not seek medical care; of those who did, 92% did not receive prophylaxis as recommended (Table 1).

Tetanus can be prevented by vaccination and appropriate wound management. Serologic surveys have demonstrated that 31% to 71% of older adults lack protective levels of tetanus antibodies. Maintenance of protection against tetanus and diphtheria after completion of the primary series can be achieved by routinely scheduling booster doses of Td at mid-decade ages (e.g., 45 years, 55 years, 65 years).

TABLE 1.  
RECOMMENDATIONS FOR TETANUS  
PROPHYLAXIS IN ROUTINE WOUND  
MANAGEMENT

History of adsorbed tetanus toxoid (doses)	Clean, minor wounds		All other wounds <sup>1</sup>	
	Td <sup>2</sup>	TIG	Td <sup>2</sup>	TIG
Unknown or $<3$	Yes	No	Yes	Yes
$\geq 3$	No <sup>3</sup>	No	No <sup>4</sup>	No

1. Such as, but not limited to, wounds contaminated with dirt, feces, soil, saliva; puncture wounds; avulsions; and wounds resulting from missiles, crushing, burns, and frostbite.

2. For children  $<7$  years old, DTP (DT, if pertussis vaccine is contraindicated) is preferred to tetanus toxoid alone. For persons  $>7$  years of age, Td is preferred to tetanus toxoid alone.

3. Yes, if more than 10 years since last dose.

4. Yes, if more than 5 years since last dose.

Reported by: Wichita-Sedgwick County Health Department; Immunization Section, Bureau of Disease Control, Kansas Department of Health and Environment.

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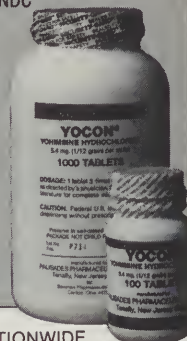
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## RADIANCE

Patients with NYHA classification II or III congestive heart failure were stabilized on a regimen of digoxin, diuretics and captopril (at least 25 mg daily) or enalapril (at least 5 mg daily).

Digoxin dosage was adjusted to obtain serum levels of 0.9 to 2.0 ng per milliliter. This required the daily administration of 0.25 mg to more than half of the patients. The mean dose of digoxin used in this study, 0.38 mg, achieved a mean serum digoxin level of 1.2 ng per milliliter.

After an eight-week run-in period, 178 patients (136 men, 42 women) were randomized to continued digoxin or to placebo.

All other medications were continued unchanged.

Primary end-points included worsening of congestive heart failure and changes in exercise tolerance.

Other end-points included quality of life assessment and left ventricular function assessed echocardiographically.

Mean doses of ACE inhibitors at the time of randomization were 0.74 mg for patients receiving captopril and 15 mg for enalapril.

## Digoxin withdrawal

The withdrawal of digoxin from patients receiving digoxin in addition to diuretics and ACE inhibitors led to significant worsening of heart failure in 23 placebo patients vs. 4 treatment patients. In all, 37% of placebo patients had to withdraw from the trial vs. 14% of digoxin patients.

During the 12-week study period, exercise performance deteriorated in placebo treated patients by both timed and endurance exercise test measurements.

Additional benefits experienced by digoxin treated patients included smaller

echocardiographic left ventricular dimensions, better left ventricular ejection fraction and higher quality of life scores.

Statistically significant observations are summarized in the table.

## Comments

The patients studied were highly selected in the sense that their ability to tolerate therapeutic doses of combined diuretics, ACE inhibitors and digoxin was documented prior to admission to the study. Nevertheless, this trial adds significantly to the growing belief that therapeutic doses of digitalis glycosides measurably enhance the treatment of patients with congestive heart failure—even those in sinus rhythm who are already receiving therapeutic doses of vasodilators and diuretics.

Although some of the measured improvements such as reduced left ventricular end-diastolic dimension are small, the overall benefits translated into fewer emergency room visits for the digoxin treated patients than for controls.

Remember that the requirement of this trial to maintain digoxin serum levels between 0.9 and 1.2 ng per milliliter led to an average oral dose of 0.37 mg daily, which is higher than usual clinically derived doses.

## Reference

Withdrawal of digoxin from patients with chronic heart failure treated with angiotensin-converting-enzyme inhibitors. Packer M et al. *New Engl J Med* 1993;329:1.

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## Placebo Digoxin

Number	93	85
<b>Worsening failure</b>	25%	5%
<b>Exercise time</b>	-25 sec	+15 sec
<b>Exercise distance</b>	-30 m	+11 m
<b>Felt worse</b>	33%	16%
<b>Change in LVEF</b>	-4%	-1%
<b>Change in LVEDD</b>	+2 mm	-1 mm
<b>Withdrawal from study</b>	37%	14%

Abbreviations: LV = Left ventricular, EF = Ejection fraction, EDD = End diastolic dimension



**Reference:** 1. Jones PH, et al. Once-daily pravastatin in patients with primary hypercholesterolemia: a dose-response study. *Clin Cardiol.* 1991;14:146-151.

## PRAVACHOL® (Pravastatin Sodium Tablets)

### CONTRAINDICATIONS

Hypersensitivity to any component of this medication.

Active liver disease or unexplained, persistent elevations in liver function tests (see WARNINGS).

**Pregnancy and lactation.** Atherosclerosis is a chronic process and discontinuation of lipid-lowering drugs during pregnancy should have little impact on the outcome of long-term therapy of primary hypercholesterolemia. Cholesterol and other products of cholesterol biosynthesis are essential components for fetal development (including synthesis of steroids and cell membranes). Since HMG-CoA reductase inhibitors decrease cholesterol synthesis and possibly the synthesis of other biologically active substances derived from cholesterol, they may cause fetal harm when administered to pregnant women. Therefore, HMG-CoA reductase inhibitors are contraindicated during pregnancy and in nursing mothers. **Pravastatin should be administered to women of childbearing age only when such patients are highly unlikely to conceive and have been informed of the potential hazards.** If the patient becomes pregnant while taking this class of drug, therapy should be discontinued and the patient apprised of the potential hazard to the fetus.

### WARNINGS

**Liver Enzymes:** HMG-CoA reductase inhibitors, like some other lipid-lowering therapies, have been associated with biochemical abnormalities of liver function. Increases of serum transaminase (ALT, AST) values to more than 3 times the upper limit of normal occurring on 2 or more (not necessarily sequential) occasions have been reported in 1.3% of patients treated with pravastatin in the U.S. over an average period of 18 months. These abnormalities were not associated with cholestasis and did not appear to be related to treatment duration. In those patients in whom these abnormalities were believed to be related to pravastatin and who were discontinued from therapy, the transaminase levels usually fell slowly to pretreatment levels. These biochemical findings are usually asymptomatic although worldwide experience indicates that anorexia, weakness, and/or abdominal pain may also be present in rare patients.

As with other lipid-lowering agents, liver function tests should be performed during therapy with pravastatin. Serum aminotransferases, including ALT (SGPT), should be monitored before treatment begins, every six weeks for the first three months, every eight weeks during the remainder of the first year, and periodically thereafter (e.g., at about six-month intervals). Special attention should be given to patients who develop increased transaminase levels. Liver function tests should be repeated to confirm an elevation and subsequently monitored at more frequent intervals. If increases in AST and ALT equal or exceed three times the upper limit of normal and persist, then therapy should be discontinued. Persistence of significant aminotransferase elevations following discontinuation of therapy may warrant consideration of liver biopsy.

Active liver disease or unexplained transaminase elevations are contraindications to the use of pravastatin (see CONTRAINDICATIONS). Caution should be exercised when pravastatin is administered to patients with a history of liver disease or heavy alcohol ingestion (see CLINICAL PHARMACOLOGY: Pharmacokinetics/Metabolism). Such patients should be closely monitored, started at the lower end of the recommended dosing range, and titrated to the desired therapeutic effect.

**Skeletal Muscle:** Rhabdomyolysis with renal dysfunction secondary to myoglobinuria has been reported with pravastatin and other drugs in this class. Uncomplicated myalgia has also been reported in pravastatin-treated patients (see ADVERSE REACTIONS). Myopathy, defined as muscle aching or muscle weakness in conjunction with increases in creatine phosphokinase (CPK) values to greater than 10 times the upper limit of normal was reported to be possibly due to pravastatin in only one patient in clinical trials (<0.1%). Myopathy should be considered in any patient with diffuse myalgias, muscle tenderness or weakness, and/or marked elevation of CPK. Patients should be advised to report promptly unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever. **Pravastatin therapy should be discontinued if markedly elevated CPK levels occur or myopathy is diagnosed or suspected. Pravastatin therapy should also be temporarily withheld in any patient experiencing an acute or serious condition predisposing to the development of renal failure secondary to rhabdomyolysis, e.g., sepsis; hypotension; major surgery; trauma; severe metabolic, endocrine, or electrolyte disorders; or uncontrolled epilepsy.**

The risk of myopathy during treatment with lovastatin is increased if therapy with either cyclosporine, gemfibrozil, erythromycin, or niacin is administered concurrently. There is no experience with the use of pravastatin together with cyclosporine. Myopathy has not been observed in clinical trials involving small numbers of patients who were treated with pravastatin together with niacin. One trial of limited size involving combined therapy with pravastatin and gemfibrozil showed a trend toward more frequent CPK elevations and patient withdrawals due to musculoskeletal symptoms in the group receiving combined treatment as compared with the groups receiving placebo, gemfibrozil, or pravastatin monotherapy. Myopathy was not reported in this trial (see PRECAUTIONS: Drug Interactions). One patient developed myopathy when clofibrate was added to a previously well tolerated regimen of pravastatin, the myopathy resolved when clofibrate therapy was stopped and pravastatin treatment continued. **The use of fibrates alone may occasionally be associated with myopathy. The combined use of pravastatin and fibrates should generally be avoided.**

### PRECAUTIONS

**General:** Pravastatin may elevate creatine phosphokinase and transaminase levels (see ADVERSE REACTIONS). This should be considered in the differential diagnosis of chest pain in a patient on therapy with pravastatin.

**Homozygous Familial Hypercholesterolemia.** Pravastatin has not been evaluated in patients with rare homozygous familial hypercholesterolemia. In this group of patients, it has been reported that HMG-CoA reductase inhibitors are less effective because the patients lack functional LDL receptors.

**Renal Insufficiency.** A single 20 mg oral dose of pravastatin was administered to 24 patients with varying degrees of renal impairment (as determined by creatinine clearance). No effect was observed on the pharmacokinetics of pravastatin or its 3 $\alpha$ -hydroxy isomeric metabolite (SQ 31,906). A small increase was seen in mean AUC values and half-life (t<sub>1/2</sub>) for the inactive enzymatic ring hydroxylation metabolite (SQ 31,945). Given this small sample size, the dosage administered, and the degree of individual variability, patients with renal impairment who are receiving pravastatin should be closely monitored.

**Information for Patients:** Patients should be advised to report promptly unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever.

**Drug Interactions:** Immunosuppressive Drugs, Gemfibrozil, Niacin (Nicotinic Acid), Erythromycin: See WARNINGS: Skeletal Muscle.

**Antipyrine:** Clearance by the cytochrome P450 system was unaltered by concomitant administration of pravastatin. Since pravastatin does not appear to induce hepatic drug-metabolizing enzymes, it is not expected that any significant interaction of pravastatin with other drugs (e.g., phenytoin, quinidine) metabolized by the cytochrome P450 system will occur.

**Cholestyramine/Colestipol:** Concomitant administration resulted in an approximately 40 to 50% decrease in the mean AUC of pravastatin. However, when pravastatin was administered 1 hour before or 4 hours after cholestyramine or 1 hour before colestipol and a standard meal, there was no clinically significant decrease in bioavailability or therapeutic effect. (See DOSAGE AND ADMINISTRATION: Concomitant Therapy.)

**Warfarin:** In a study involving 10 healthy male subjects given pravastatin and warfarin concomitantly for 6 days, bioavailability parameters at steady state for pravastatin (parent compound) were not altered. Pravastatin did not alter the plasma protein-binding of warfarin. Concomitant dosing did increase the AUC and C<sub>max</sub> of warfarin but did not produce any changes in its anticoagulant action (i.e., no increase was seen in mean prothrombin time after 6 days of concomitant therapy). However, bleeding and extreme prolongation of prothrombin time has been reported with another drug in this class. Patients receiving warfarin-type anticoagulants should have their prothrombin times closely monitored when pravastatin is initiated or the dosage of pravastatin is changed.

**Cimetidine:** The AUC<sub>0-12h</sub> for pravastatin when given with cimetidine was not significantly different from the AUC for pravastatin when given alone. A significant difference was observed between the AUC's for pravastatin when given with cimetidine compared to when administered with anticoagulant.

**Digoxin:** In a crossover trial involving 18 healthy male subjects given pravastatin and digoxin concurrently for 9 days, the bioavailability parameters of digoxin were not affected. The AUC of pravastatin tended to increase, but the overall bioavailability of pravastatin plus its metabolites SQ 31,906 and SQ 31,945 was not altered.

**Gemfibrozil:** In a crossover study in 20 healthy male volunteers given concomitant single doses of pravastatin and gemfibrozil, there was a significant decrease in urinary excretion and protein binding of pravastatin. In addition, there was a significant increase in AUC, C<sub>max</sub>, and T<sub>max</sub> for the pravastatin metabolite SQ 31,906. Combination therapy with pravastatin and gemfibrozil is generally not recommended.

In interaction studies with aspirin, **antacids** [1 hour prior to PRAVACHOL (pravastatin sodium)], **cimetidine**, **nicotinic acid**, or **probuco**, no statistically significant differences in bioavailability were seen when PRAVACHOL was administered.

**Other Drugs:** During clinical trials, no noticeable drug interactions were reported when PRAVACHOL was added to: diuretics, antihypertensives, digitalis, converting-enzyme inhibitors, calcium channel blockers, beta-blockers, or nitroglycerin.

**Endocrine Function:** HMG-CoA reductase inhibitors interfere with cholesterol synthesis and lower circulating cholesterol levels and, as such, might theoretically blunt adrenal or gonadal steroid hormone production. Results of clinical trials with pravastatin in males and post-menopausal females were inconsistent with regard to possible effects of the drug on basal steroid hormone levels. In a study of 21 males, the mean testosterone response to human chorionic gonadotropin was significantly reduced (p<0.004) after 16 weeks of treatment with 40 mg of pravastatin. However, the percentage of patients showing a  $\geq$ 50% rise in plasma testosterone after human chorionic gonadotropin stimulation did not change significantly after therapy in these patients. The effects of HMG-CoA reductase inhibitors on spermatogenesis and fertility have not been studied in adequate numbers of patients. The effects, if any, of pravastatin on the pituitary-gonadal axis in pre-menopausal females are unknown. Patients treated with pravastatin who display clinical evidence of endocrine dysfunction should be evaluated appropriately. Caution should also be exercised if an HMG-CoA reductase inhibitor or other agent used to lower cholesterol levels is administered to patients also receiving other drugs (e.g., ketoconazole, spironolactone, cimetidine) that may diminish the levels or activity of steroid hormones.

**CNS Toxicity:** CNS vascular lesions, characterized by perivascular hemorrhage and edema and mononuclear cell

infiltration of perivascular spaces, were seen in dogs treated with pravastatin at a dose of 25 mg/kg/day, a dose that produced a plasma drug level about 50 times higher than the mean drug level in humans taking 40 mg/day. Similar CNS vascular lesions have been observed with several other drugs in this class.

A chemically similar drug in this class produced optic nerve degeneration (Wallerian degeneration of retinogeniculate fibers) in clinically normal dogs in a dose-dependent fashion starting at 60 mg/kg/day, a dose that produced mean plasma drug levels about 30 times higher than the mean drug level in humans taking the highest recommended dose (as measured by total enzyme inhibitory activity). This same drug also produced vestibulocochlear Wallerian-like degeneration and retinal ganglion cell chromatolysis in dogs treated for 14 weeks at 180 mg/kg/day, a dose which resulted in a mean plasma drug level similar to that seen with the 60 mg/kg/day dose.

**Carcinogenesis, Mutagenesis, Impairment of Fertility:** In a 2-year study in rats fed pravastatin at doses of 10, 30, or 100 mg/kg body weight, there was an increased incidence of hepatocellular carcinomas in males at the highest dose (p<0.01). Although rats were given up to 125 times the human dose (HD) on a mg/kg body weight basis, their serum drug levels were only 6 to 10 times higher than those measured in humans given 40 mg pravastatin as measured by AUC.

The oral administration of 10, 30, or 100 mg/kg (producing plasma drug levels approximately 0.5 to 5.0 times human drug levels at 40 mg) of pravastatin to mice for 22 months resulted in a statistically significant increase in the incidence of malignant lymphomas in treated females when all treatment groups were pooled and compared to controls (p<0.05). The incidence was not dose-related and male mice were not affected.

A chemically similar drug in this class was administered to mice for 72 weeks at 25, 100, and 400 mg/kg body weight, which resulted in mean serum drug levels approximately 3, 15, and 33 times higher than the mean human serum drug concentration (as total inhibitory activity) after a 40 mg oral dose. Liver carcinomas were significantly increased in high-dose females and mid- and high-dose males, with a maximum incidence of 90 percent in males. The incidence of adenomas of the liver was significantly increased in mid- and high-dose females. Drug treatment also significantly increased the incidence of lung adenomas in mid- and high-dose males and females. Adenomas of the eye Harderian gland (a gland of the eye of rodents) were significantly higher in high-dose mice than in controls.

No evidence of mutagenicity was observed *in vitro*, with or without rat-liver metabolic activation, in the following studies: microbial mutagen tests, using mutant strains of *Salmonella typhimurium* or *Escherichia coli*; a forward mutation assay in L5178Y TK +/– mouse lymphoma cells; a chromosomal aberration test in hamster cells; and a gene conversion assay using *Saccharomyces cerevisiae*. In addition, there was no evidence of mutagenicity in either a dominant lethal test in mice or a micronucleus test in mice.

In a study in rats, with daily doses up to 500 mg/kg, pravastatin did not produce any adverse effects on fertility or general reproductive performance. However, in a study with another HMG-CoA reductase inhibitor, there was decreased fertility in male rats treated for 34 weeks at 25 mg/kg body weight, although this effect was not observed in a subsequent fertility study when this same dose was administered for 11 weeks (the entire cycle of spermatogenesis, including epididymal maturation). In rats treated with this same reductase inhibitor at 180 mg/kg/day, seminiferous tubule degeneration (necrosis and loss of spermatogenic epithelium) was observed. Although not seen with pravastatin, two similar drugs in this class caused drug-related testicular atrophy, decreased spermatogenesis, spermatocytic degeneration, and giant cell formation in dogs. The clinical significance of these findings is unclear.

**Pregnancy: Pregnancy Category X:** See CONTRAINDICATIONS.

Safety in pregnant women has not been established. Pravastatin was not teratogenic in rats at doses up to 1000 mg/kg/day or in rabbits at doses of up to 50 mg/kg/day. These doses resulted in 20x (rabbit) or 240x (rat) the human exposure based on surface area (mg/meter<sup>2</sup>). However, in studies with another HMG-CoA reductase inhibitor, skeletal malformations were observed in rats and mice. PRAVACHOL (pravastatin sodium) should be administered to women of child-bearing potential only when such patients are highly unlikely to conceive and have been informed of the potential hazards. If the woman becomes pregnant while taking PRAVACHOL, it should be discontinued and the patient advised again as to the potential hazards to the fetus.

**Nursing Mothers:** A small amount of pravastatin is excreted in human breast milk. Because of the potential for serious adverse reactions in nursing infants, women taking PRAVACHOL should not nurse (see CONTRAINDICATIONS).

**Pediatric Use:** Safety and effectiveness in individuals less than 18 years old have not been established. Hence, treatment in patients less than 18 years old is not recommended at this time. (See also PRECAUTIONS: General.)

### ADVERSE REACTIONS

Pravastatin is generally well tolerated; adverse reactions have usually been mild and transient. In 4-month long placebo-controlled trials, 1.7% of pravastatin-treated patients and 1.2% of placebo-treated patients were discontinued from treatment because of adverse experiences attributed to study drug therapy; this difference was not statistically significant. In long-term studies, the most common reasons for discontinuation were asymptomatic serum transaminase increases and mild, non-specific gastrointestinal complaints. During clinical trials the overall incidence of adverse events in the elderly was not different from the incidence observed in younger patients.

**Adverse Clinical Events:** All adverse clinical events (regardless of attribution) reported in more than 2% of pravastatin-treated patients in the placebo-controlled trials are identified in the table below, also shown are the percentages of patients in whom these medical events were believed to be related or possibly related to the drug:

Body System/Event	All Events %		Events Attributed to Study Drug %	
	Pravastatin (N=900)	Placebo (N=411)	Pravastatin (N=900)	Placebo (N=411)
Cardiovascular				
Cardiac Chest Pain	4.0	3.4	0.1	0.0
Dermatologic				
Rash	4.0*	1.1	1.3	0.9
Gastrointestinal				
Nausea/Vomiting	7.3	7.1	2.9	3.4
Diarrhea	6.2	5.6	2.0	1.9
Abdominal Pain	5.4	6.9	2.0	3.9
Constipation	4.0	7.1	2.4	5.1
Flatulence	3.3	3.6	2.7	3.4
Heartburn	2.9	1.9	2.0	0.7
General				
Fatigue	3.8	3.4	1.9	1.0
Chest Pain	3.7	1.9	0.3	0.2
Influenza	2.4*	0.7	0.0	0.0
Musculoskeletal				
Localized Pain	10.0	9.0	1.4	1.5
Myalgia	2.7	1.0	0.6	0.0
Nervous System				
Headache	6.2	3.9	1.7*	0.2
Dizziness	3.3	3.2	1.0	0.5
Renal/Genitourinary				
Urinary Abnormality	2.4	2.9	0.7	1.2
Respiratory				
Common Cold	7.0	6.3	0.0	0.0
Rhinitis	4.0	4.1	0.1	0.0
Cough	2.6	1.7	0.1	0.0

\*Statistically significantly different from placebo.

The following effects have been reported with drugs in this class:

**Skeletal:** myopathy, rhabdomyolysis.

**Neurological:** dysfunction of certain cranial nerves (including alteration of taste, impairment of extra-ocular movement, facial paresis), tremor, vertigo, memory loss, paresthesia, peripheral neuropathy, peripheral nerve palsy.

**Hypersensitivity Reactions:** An apparent hypersensitivity syndrome has been reported rarely which has included one or more of the following features: anaphylaxis, angioedema, lupus erythematosus-like syndrome, polymyalgia rheumatica, vasculitis, purpura, thrombocytopenia, leukopenia, hemolytic anemia, positive ANA, ESR increase, arthritis, arthralgia, urticaria, asthenia, photosensitivity, fever, chills, flushing, malaise, dyspnea, toxic epidermal necrolysis, erythema multiforme, including Stevens-Johnson syndrome.

**Gastrointestinal:** pancreatitis, hepatitis, including chronic active hepatitis, cholestatic jaundice, fatty change in liver, and, rarely, cirrhosis, fulminant hepatic necrosis, and hepatoma; anorexia, vomiting.

**Reproductive:** gynecostoma, loss of libido, erectile dysfunction.

**Eye:** progression of cataracts (lens opacities), ophthalmoplegia.

**Laboratory Test Abnormalities:** Increases in serum transaminase (ALT, AST) values and CPK have been observed (see WARNINGS).

Transient, asymptomatic eosinophilia has been reported. Eosinophil counts usually returned to normal despite continued therapy. Anemia, thrombocytopenia, and leukopenia have been reported with other HMG-CoA reductase inhibitors. **Concomitant Therapy:** Pravastatin has been administered concurrently with cholestyramine, colestipol, nicotinic acid, probucol and gemfibrozil. Preliminary data suggest that the addition of either probucol or gemfibrozil to therapy with lovastatin or pravastatin is **not** associated with greater reduction in LDL cholesterol than that achieved with lovastatin or pravastatin alone. No adverse reactions unique to the combination or in addition to those previously reported for each drug alone have been reported. Myopathy and rhabdomyolysis (with or without acute renal failure) have been reported when another HMG-CoA reductase inhibitor was used in combination with immunosuppressive drugs, gemfibrozil, erythromycin, or lipid-lowering doses of nicotinic acid. Concomitant therapy with HMG-CoA reductase inhibitors and these agents is generally not recommended. (See WARNINGS: Skeletal Muscle and PRECAUTIONS: Drug Interactions.)

**Skeletal Muscle and PRECAUTIONS: Drug Interactions.**

### OVERDOSAGE

There have been no reports of overdoses with pravastatin.

Should an accidental overdose occur, treat symptomatically and institute supportive measures as required.



THE PRAVACHOL® DIRECTION  
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- Usual dose: 20 mg once daily at bedtime, with or without food

  
**PRAVACHOL®**  
pravastatin sodium 20 mg tablets

PRAVACHOL is indicated as an adjunct to diet for the reduction of elevated total and LDL-cholesterol levels in patients with primary hypercholesterolemia (Types IIa and IIb) when the response to diet alone has not been adequate.

Active liver disease or unexplained transaminase elevations, pregnancy and lactation are contraindications to the use of pravastatin sodium.

Please see CONTRAINDICATIONS, WARNINGS, PRECAUTIONS, and ADVERSE REACTIONS in the brief summary of prescribing information on the adjacent page.



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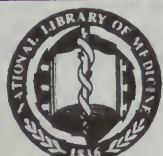
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- Medicine and Computers: Update
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# Discover The Elegance Of A Hybrid



At first glance, it's the *beauty* of a rose that catches the eye. The vibrant color. The delicately shaped petals. But study it more closely, and its *elegance* becomes apparent—a gentle blend of softness and strength.

At first glance, it's the *enhanced performance* of Vaseretic that catches the eye. But study Vaseretic more closely, and its *elegance* becomes apparent. The way its one-tablet, once-a-day dosage minimizes multiple

medications. Minimizes insurance copayments. And minimizes potassium supplementation.

A hybrid *blending of tolerability and power* that's available for the right patient. Vaseretic is indicated for the treatment of hypertension in patients for whom combination therapy is appropriate.

And an elegant discovery for your practice.

**USE IN PREGNANCY:** When used in pregnancy during the second and third trimesters, ACE inhibitors can cause injury and even death to the developing fetus. When pregnancy is detected, Vaseretic® (Enalapril Maleate-Hydrochlorothiazide) should be discontinued as soon as possible. See WARNINGS, Fetal/Neonatal Morbidity and Mortality.

**VASERETIC® 10-25** *Next*  
Enalapril Maleate-Hydrochlorothiazide

Dosage must be individualized; the fixed combination is not for initial therapy.

Evaluation of the hypertensive patient should always include assessment of renal function.

For a Brief Summary of Prescribing Information, see adjacent pages.



**TABLETS**  
**VASERETIC®**  
(ENALAPRIL MALEATE-HYDROCHLOROTHIAZIDE)

**USE IN PREGNANCY:** When used in pregnancy during the second and third trimesters, ACE inhibitors can cause injury and even death to the developing fetus. When pregnancy is detected, VASERETIC (Enalapril Maleate-Hydrochlorothiazide) should be discontinued as soon as possible. See **WARNINGS, Fetal/Neonatal Morbidity and Mortality**.

**CONTRAINDICATIONS:** VASERETIC is contraindicated in patients who are hypersensitive to any component of this product and in patients with a history of angioedema related to previous treatment with an angiotensin converting enzyme inhibitor. Because of the hydrochlorothiazide component, this product is contraindicated in patients with anuria or hypersensitivity to other sulfonamide-derived drugs.

**WARNINGS:** *General; Enalapril Maleate; Hypotension:* Excessive hypotension was rarely seen in uncomplicated hypertensive patients but is a possible consequence of enalapril use in severely salt/volume depleted persons such as those treated vigorously with diuretics or patients on dialysis.

Syncope has been reported in 1.3 percent of patients receiving VASERETIC. In patients receiving enalapril alone, the incidence of syncope is 0.5 percent. The overall incidence of syncope may be reduced by proper titration of the individual components. (See **PRECAUTIONS, Drug Interactions**, and **ADVERSE REACTIONS**.)

In patients with severe congestive heart failure, with or without associated renal insufficiency, excessive hypotension has been observed and may be associated with oliguria and/or progressive azotemia, and rarely with acute renal failure and/or death. Because of the potential fall in blood pressure in these patients, therapy should be started under very close medical supervision. Such patients should be followed closely for the first two weeks of treatment and whenever the dose of enalapril and/or diuretic is increased. Similar considerations may apply to patients with ischemic heart or cerebrovascular disease, in whom an excessive fall in blood pressure could result in a myocardial infarction or cerebrovascular accident.

If hypotension occurs, the patient should be placed in the supine position and, if necessary, receive an intravenous infusion of normal saline. A transient hypotensive response is not a contraindication to further doses, which usually can be given without difficulty once the blood pressure has increased after volume expansion.

**Angioedema:** Angioedema of the face, extremities, lips, tongue, glottis and/or larynx has been reported in patients treated with angiotensin converting enzyme inhibitors, including enalapril. In such cases VASERETIC should be promptly discontinued and appropriate therapy and monitoring should be provided until complete and sustained resolution of signs and symptoms has occurred. In instances where swelling has been confined to the face and lips the condition has generally resolved without treatment, although antihistamines have been useful in relieving symptoms. Angioedema associated with laryngeal edema may be fatal. Where there is involvement of the tongue, glottis or larynx, likely to cause airway obstruction, appropriate therapy, e.g., subcutaneous epinephrine solution 1:1000 (0.3 mL to 0.5 mL) and/or measures necessary to ensure a patent airway, should be promptly provided. (See **ADVERSE REACTIONS**.)

Patients with a history of angioedema unrelated to ACE inhibitor therapy may be at increased risk of angioedema while receiving an ACE inhibitor (see also **CONTRAINDICATIONS**).

**Neutropenia/Agranulocytosis:** Another angiotensin converting enzyme inhibitor, captopril, has been shown to cause agranulocytosis and bone marrow depression, rarely in uncomplicated patients but more frequently in patients with renal impairment especially if they also have a collagen vascular disease. Available data from clinical trials of enalapril are insufficient to show that enalapril does not cause agranulocytosis at similar rates. Marketing experience has revealed several cases of neutropenia or agranulocytosis in which a causal relationship to enalapril cannot be excluded. Periodic monitoring of white blood cell counts in patients with collagen vascular disease and renal disease should be considered.

**Hydrochlorothiazide:** Thiazides should be used with caution in severe renal disease. In patients with renal disease, thiazides may precipitate azotemia. Cumulative effects of the drug may develop in patients with impaired renal function.

Thiazides should be used with caution in patients with impaired hepatic function or progressive liver disease, since minor alterations of fluid and electrolyte balance may precipitate hepatic coma.

Sensitivity reactions may occur in patients with or without a history of allergy or bronchial asthma.

The possibility of exacerbation or activation of systemic lupus erythematosus has been reported.

Lithium generally should not be given with thiazides (see **PRECAUTIONS, Drug Interactions, Enalapril Maleate and Hydrochlorothiazide**).

**Pregnancy, Enalapril-Hydrochlorothiazide:** There was no teratogenicity in rats given up to 90 mg/kg/day of enalapril (150 times the maximum human dose) in combination with 10 mg/kg/day of hydrochlorothiazide (2 1/2 times the maximum human dose) or in mice given up to 30 mg/kg/day of enalapril (50 times the maximum human dose) in combination with 10 mg/kg/day of hydrochlorothiazide (2 1/2 times the maximum human dose). At these doses, fetotoxicity expressed as a decrease in average fetal weight occurred in both species. No fetotoxicity occurred at lower doses; 30/10 mg/kg/day of enalapril-hydrochlorothiazide in rats and 10/10 mg/kg/day of enalapril-hydrochlorothiazide in mice.

When used in pregnancy during the second and third trimesters, ACE inhibitors can cause injury and even death to the developing fetus. When pregnancy is detected, VASERETIC should be discontinued as soon as possible. (See **Enalapril Maleate, Fetal/Neonatal Morbidity and Mortality**, below.)

**Enalapril Maleate; Fetal/Neonatal Morbidity and Mortality:** ACE inhibitors can cause fetal and neonatal morbidity and death when administered to pregnant women. Several dozen cases have been reported in the world literature. When pregnancy is detected, ACE inhibitors should be discontinued as soon as possible.

The use of ACE inhibitors during the second and third trimesters of pregnancy has been associated with fetal and neonatal injury, including hypotension, neonatal skull hypoplasia, anuria, reversible or irreversible renal failure, and death. Oligohydramnios has also been reported, presumably resulting from decreased fetal renal function; oligohydramnios in this setting has been associated with fetal limb contractures, craniofacial deformation, and hypoplastic lung development. Prematurity, intrauterine growth retardation, and patent ductus arteriosus have also been reported, although it is not clear whether these occurrences were due to the ACE-inhibitor exposure.

These adverse effects do not appear to have resulted from intrauterine ACE-inhibitor exposure that has been limited to the first trimester. Mothers whose embryos and fetuses are exposed to ACE inhibitors only during the first trimester should be so informed. Nonetheless, when patients become pregnant, physicians should make every effort to discontinue the use of VASERETIC as soon as possible.

Rarely (probably less often than once in every thousand pregnancies), no

10  
mg

25  
mg

alternative to ACE inhibitors will be found. In these rare cases, the mothers should be apprised of the potential hazards to their fetuses, and serial ultrasound examinations should be performed to assess the intraamniotic environment.

If oligohydramnios is observed, VASERETIC should be discontinued unless it is considered lifesaving for the mother. Contraction stress testing (CST), a non-stress test (NST), or biophysical profiling (BPP) may be appropriate, depending upon the week of pregnancy. Patients and physicians should be aware, however, that oligohydramnios may not appear until after the fetus has sustained irreversible injury.

Infants with histories of *in utero* exposure to ACE inhibitors should be closely observed for hypotension, oliguria, and hyperkalemia. If oliguria occurs, attention should be directed toward support of blood pressure and renal perfusion. Exchange transfusion or dialysis may be required as means of reversing hypotension and/or substituting for disordered renal function. Enalapril, which crosses the placenta, has been removed from neonatal circulation by peritoneal dialysis with some clinical benefit, and theoretically may be removed by exchange transfusion, although there is no experience with the latter procedure.

No teratogenic effects of enalapril were seen in studies of pregnant rats, and rabbits. On a mg/kg basis, the doses used were up to 333 times (in rats), and 50 times (in rabbits) the maximum recommended human dose.

**Hydrochlorothiazide; Teratogenic Effects:** Reproduction studies in the rabbit, the mouse and the rat at doses up to 100 mg/kg/day (50 times the human dose) showed no evidence of external abnormalities of the fetus due to hydrochlorothiazide. Hydrochlorothiazide given in a two-litter study in rats at doses of 4-5.6 mg/kg/day (approximately 1-2 times the usual daily human dose) did not impair fertility or produce birth abnormalities in the offspring. Thiazides cross the placental barrier and appear in cord blood.

**Nonteratogenic Effects:** These may include fetal or neonatal jaundice, thrombocytopenia, and possibly other adverse reactions which have occurred in the adult.

**PRECAUTIONS:** *General; Enalapril Maleate; Impaired Renal Function:* As a consequence of inhibiting the renin-angiotensin-aldosterone system, changes in renal function may be anticipated in susceptible individuals. In patients with severe congestive heart failure whose renal function may depend on the activity of the renin-angiotensin-aldosterone system, treatment with angiotensin converting enzyme inhibitors, including enalapril, may be associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death.

In clinical studies in hypertensive patients with unilateral or bilateral renal artery stenosis, increases in blood urea nitrogen and serum creatinine were observed in 20 percent of patients. These increases were almost always reversible upon discontinuation of enalapril and/or diuretic therapy. In such patients renal function should be monitored during the first few weeks of therapy.

Some patients with hypertension or heart failure with no apparent pre-existing renal vascular disease have developed increases in blood urea and serum creatinine, usually minor and transient, especially when enalapril has been given concomitantly with a diuretic. This is more likely to occur in patients with pre-existing renal impairment. Dosage reduction of enalapril and/or discontinuation of the diuretic may be required.

**Evaluation of the hypertensive patient should always include assessment of renal function.**

**Hemodialysis Patients:** Anaphylactoid reactions have been reported in patients dialyzed with high-flux membranes (e.g., AN 69®) and treated concomitantly with an ACE inhibitor. In these patients consideration should be given to using a different type of dialysis membrane or a different class of antihypertensive agent.

**Hyperkalemia:** Elevated serum potassium (greater than 5.7 mEq/L) was observed in approximately one percent of hypertensive patients in clinical trials treated with enalapril alone. In most cases these were isolated values which resolved despite continued therapy, although hyperkalemia was a cause of discontinuation of therapy in 0.28 percent of hypertensive patients. Hyperkalemia was less frequent (approximately 0.1 percent) in patients treated with enalapril plus hydrochlorothiazide. Risk factors for the development of hyperkalemia include renal insufficiency, diabetes mellitus, and the concomitant use of potassium-sparing diuretics, potassium supplements and/or potassium-containing salt substitutes, which should be used cautiously, if at all, with enalapril. (See **Drug Interactions**.)

**Cough:** Cough has been reported with the use of ACE inhibitors. Characteristically, the cough is nonproductive, persistent and resolves after discontinuation of therapy. ACE inhibitor-induced cough should be considered as part of the differential diagnosis of cough.

**Surgery/Anesthesia:** In patients undergoing major surgery or during anesthesia with agents that produce hypotension, enalapril may block angiotensin II formation secondary to compensatory renin release. If hypotension occurs and is considered to be due to this mechanism, it can be corrected by volume expansion.

**Hydrochlorothiazide:** Periodic determination of serum electrolytes to detect possible electrolyte imbalance should be performed at appropriate intervals. All patients receiving thiazide therapy should be observed for clinical signs of fluid or electrolyte imbalance: hyponatremia, hypochloremic alkalosis, and hypokalemia. Serum and urine electrolyte determinations are particularly important when the patient is vomiting excessively or receiving parenteral fluids. Warning signs or symptoms of fluid and electrolyte imbalance, irrespective of cause, include dryness of mouth, thirst, weakness, lethargy, drowsiness, restlessness, confusion, seizures, muscle pains or cramps, muscular fatigue, hypotension, oliguria, tachycardia, and gastrointestinal disturbances such as nausea and vomiting.

Hypokalemia may develop, especially with brisk diuresis, when severe cirrhosis is present, or after prolonged therapy. Interference with adequate oral electrolyte intake will also contribute to hypokalemia. Hypokalemia may cause cardiac arrhythmia and may also sensitize or exaggerate the response of the heart to the toxic effects of digitalis (e.g., increased ventricular irritability). Because enalapril reduces the production of aldosterone, concomitant therapy with enalapril attenuates the diuretic-induced potassium loss (see **Drug Interactions, Agents Increasing Serum Potassium**).

Although any chloride deficit is generally mild and usually does not require specific treatment except under extraordinary circumstances (as in liver disease or renal disease), chloride replacement may be required in the

treatment of metabolic alkalosis.

Dilutional hyponatremia may occur in edematous patients in hot weather; appropriate therapy is water restriction, rather than administration of salt except in rare instances when the hyponatremia is life-threatening. In actual salt depletion, appropriate replacement is the therapy of choice.

Hyperuricemia may occur or frank gout may be precipitated in certain patients receiving thiazide therapy.

In diabetic patients dosage adjustments of insulin or oral hypoglycemic agents may be required. Hyperglycemia may occur with thiazide diuretics. Thus latent diabetes mellitus may become manifest during thiazide therapy.

The antihypertensive effects of the drug may be enhanced in the postsympathectomy patient.

If progressive renal impairment becomes evident consider withholding or discontinuing diuretic therapy.

Thiazides have been shown to increase the urinary excretion of magnesium; this may result in hypomagnesemia.

Thiazides may decrease urinary calcium excretion. Thiazides may cause intermittent and slight elevation of serum calcium in the absence of known disorders of calcium metabolism. Marked hypercalcemia may be evidence of hidden hyperparathyroidism. Thiazides should be discontinued before carrying out tests for parathyroid function.

Increases in cholesterol and triglyceride levels may be associated with thiazide diuretic therapy.

**Information for Patients; Angioedema:** Angioedema, including laryngeal edema, may occur especially following the first dose of enalapril. Patients should be so advised and told to report immediately any signs or symptoms suggesting angioedema (swelling of face, extremities, eyes, lips, tongue, difficulty in swallowing or breathing) and to take no more drug until they have consulted with the prescribing physician.

**Hypotension:** Patients should be cautioned to report lightheadedness especially during the first few days of therapy. If actual syncope occurs, the patients should be told to discontinue the drug until they have consulted with the prescribing physician.

All patients should be cautioned that excessive perspiration and dehydration may lead to an excessive fall in blood pressure because of reduction in fluid volume. Other causes of volume depletion such as vomiting or diarrhea may also lead to a fall in blood pressure; patients should be advised to consult with the physician.

**Hyperkalemia:** Patients should be told not to use salt substitutes containing potassium while taking this drug.

**Neutropenia:** Patients should be told to report promptly any indication of infection (e.g., sore throat, fever) which may be a sign of neutropenia.

**Pregnancy:** Female patients of childbearing age should be told about the consequences of second- and third-trimester exposure to ACE inhibitors, and they should also be told that these consequences do not appear to have resulted from intrauterine ACE-inhibitor exposure that has been limited to the first trimester. These patients should be asked to report pregnancies to their physicians as soon as possible.

**NOTE:** As with many other drugs, certain advice to patients being treated with VASERETIC is warranted. This information is intended to aid in the safe and effective use of this medication. It is not a disclosure of all possible adverse or intended effects.

**Drug Interactions; Enalapril Maleate; Hypotension—Patients on Diuretic Therapy:** Patients on diuretics and especially those in whom diuretic therapy was recently instituted, may occasionally experience an excessive reduction of blood pressure after initiation of therapy with enalapril. The possibility of hypotensive effects with enalapril can be minimized by either discontinuing the diuretic or increasing the salt intake prior to initiation of treatment with enalapril. If it is necessary to continue the diuretic, provide medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See **WARNINGS**.)

**Agents Causing Renin Release:** The antihypertensive effect of enalapril is augmented by antihypertensive agents that cause renin release (e.g., diuretics).

**Other Cardiovascular Agents:** Enalapril has been used concomitantly with beta adrenergic-blocking agents, methylglucosides, nitrates, calcium-blocking agents, hydralazine and prazosin without evidence of clinically significant adverse interactions.

**Agents Increasing Serum Potassium:** Enalapril attenuates diuretic-induced potassium loss. Potassium-sparing diuretics (e.g., spironolactone, triamterene, or amiloride), potassium supplements, or potassium-containing salt substitutes may lead to significant increases in serum potassium. Therefore, if concomitant use of these agents is indicated because of demonstrated hypokalemia they should be used with caution and with frequent monitoring of serum potassium.

**Lithium:** Lithium toxicity has been reported in patients receiving lithium concomitantly with drugs which cause elimination of sodium, including ACE inhibitors. A few cases of lithium toxicity have been reported in patients receiving concomitant enalapril and lithium and were reversible upon discontinuation of both drugs. It is recommended that serum lithium levels be monitored frequently if enalapril is administered concomitantly with lithium. **Hydrochlorothiazide:** When administered concurrently the following drugs may interact with thiazide diuretics:

**Alcohol, barbiturates, or narcotics—**potentiation of orthostatic hypotension may occur.

**Antidiabetic drugs (oral agents and insulin)—**dosage adjustment of the antidiabetic drug may be required.

**Other antihypertensive drugs—**additive effect or potentiation.

**Cholestyramine and colestipol resins—**Absorption of hydrochlorothiazide is impaired in the presence of anionic exchange resins. Single doses of either cholestyramine or colestipol resins bind the hydrochlorothiazide and reduce its absorption from the gastrointestinal tract by up to 85 and 43 percent, respectively.

**Corticosteroids, ACTH—**intensified electrolyte depletion, particularly hypokalemia.

**Pressor amines (e.g., norepinephrine)—**possible decreased response to pressor amines but not sufficient to preclude their use.

**Skeletal muscle relaxants, nondepolarizing (e.g., tubocurarine)—**possible increased responsiveness to the muscle relaxant.

**Lithium—**should not generally be given with diuretics. Diuretic agents reduce the renal clearance of lithium and add a high risk of lithium toxicity. Refer to the package insert for lithium preparations before use of such preparations with VASERETIC.

**Non-steroidal Anti-inflammatory Drugs—**In some patients, the administration of a non-steroidal anti-inflammatory agent can reduce the diuretic, natriuretic, and antihypertensive effects of loop, potassium-sparing and thiazide diuretics. Therefore, when VASERETIC and non-steroidal anti-inflammatory agents are used concomitantly, the patient should be observed closely to determine if the desired effect of the diuretic is obtained.

**Carcinogenesis, Mutagenesis, Impairment of Fertility:** Enalapril in combination with hydrochlorothiazide was not mutagenic in the Ames microbial mutagen test with or without metabolic activation. Enalapril-hydrochlorothiazide did not produce DNA single strand breaks in an *in vitro* alkaline elution assay in rat hepatocytes or chromosomal aberrations in an *in vitro* mouse



bone marrow assay.

**Enalapril Maleate:** There was no evidence of a tumorigenic effect when enalapril was administered for 106 weeks to rats at doses up to 90 mg/kg/day (150 times\* the maximum daily human dose). Enalapril has also been administered for 94 weeks to male and female mice at doses up to 90 and 180 mg/kg/day, respectively, (150 and 300 times\* the maximum daily dose for humans) and showed no evidence of carcinogenicity.

Neither enalapril maleate nor the active diacid was mutagenic in the Ames microbial mutagen test with or without metabolic activation. Enalapril was also negative in the following genotoxicity studies: rec-assay, reverse mutation assay with *E. coli*, sister chromatid exchange with cultured mammalian cells, and the micronucleus test with mice, as well as in an *in vivo* cytogenetic study using mouse bone marrow.

There were no adverse effects on reproductive performance in male and female rats treated with 10 to 90 mg/kg/day of enalapril.

**Hydrochlorothiazide:** Two-year feeding studies in mice and rats conducted under the auspices of the National Toxicology Program (NTP) uncovered no evidence of a carcinogenic potential of hydrochlorothiazide in female mice (at doses of up to approximately 600 mg/kg/day) or in male and female rats (at doses of up to approximately 100 mg/kg/day). The NTP, however, found equivocal evidence for hepatocarcinogenicity in male mice.

**Hydrochlorothiazide:** was not genotoxic *in vitro* in the Ames mutagenicity assay of *Salmonella typhimurium* strains TA 98, TA 100, TA 1535, TA 1537, and TA 1538 and in the Chinese Hamster Ovary (CHO) test for chromosomal aberrations, or *in vivo* in assays using mouse germinal cell chromosomes, Chinese hamster bone marrow chromosomes, and the *Drosophila* sex-linked recessive lethal trait gene. Positive test results were obtained only in the *in vitro* CHO Sister Chromatid Exchange (clastogenicity) and in the Mouse Lymphoma Cell (mutagenicity) assays, using concentrations of hydrochlorothiazide from 43 to 1300 µg/mL, and in the *Aspergillus nidulans* non-disjunction assay at an unspecified concentration.

Hydrochlorothiazide had no adverse effects on the fertility of mice and rats of either sex in studies wherein these species were exposed, via their diet, to doses of up to 100 and 4 mg/kg, respectively, prior to conception and throughout gestation.

**Pregnancy, Pregnancy Categories C (first trimester) and D (second and third trimesters):** See WARNINGS, Pregnancy, Enalapril Maleate, Fetal/Neonatal Morbidity and Mortality.

**Nursing Mothers:** Enalapril and enalaprilat are detected in human milk in trace amounts. Thiazides do appear in human milk. Because of the potential for serious reactions in nursing infants from either drug, a decision should be made whether to discontinue nursing or to discontinue VASERETIC, taking into account the importance of the drug to the mother.

**Pediatric Use:** Safety and effectiveness in children have not been established.

**ADVERSE REACTIONS:** VASERETIC has been evaluated for safety in more than 1500 patients, including over 300 patients treated for one year or more. In clinical trials with VASERETIC no adverse experiences peculiar to this combination drug have been observed. Adverse experiences that have occurred, have been limited to those that have been previously reported with enalapril or hydrochlorothiazide.

The most frequent clinical adverse experiences in controlled trials were: dizziness (8.6 percent), headache (5.5 percent), fatigue (3.9 percent) and cough (3.5 percent). Adverse experiences occurring in greater than two percent of patients treated with VASERETIC in controlled clinical trials were: muscle cramps (2.7 percent), nausea (2.5 percent), asthenia (2.4 percent), orthostatic effects (2.3 percent), impotence (2.2 percent), and diarrhea (2.1 percent).

Clinical adverse experiences occurring in 0.5 to 20 percent of patients in controlled trials included: **Body As A Whole:** Syncope, chest pain, abdominal pain; **Cardiovascular:** Orthostatic hypotension, palpitation, tachycardia; **Digestive:** Vomiting, dyspepsia, constipation, flatulence, dry mouth; **Nervous/Psychiatric:** Insomnia, nervousness, paresthesia, somnolence, vertigo; **Skin:** Pruritus, rash; **Other:** Dyspnea, gout, back pain, arthralgia, diaphoresis, decreased libido, tinnitus, urinary tract infection.

**Angioedema:** Angioedema has been reported in patients receiving VASERETIC (0.6 percent). Angioedema associated with laryngeal edema may be fatal. If angioedema of the face, extremities, lips, tongue, glottis and/or larynx occurs, treatment with VASERETIC should be discontinued and appropriate therapy instituted immediately. (See WARNINGS.)

**Hypotension:** In clinical trials, adverse effects relating to hypotension occurred as follows: hypotension (0.9 percent), orthostatic hypotension (1.5 percent), other orthostatic effects (2.3 percent). In addition syncope occurred in 1.3 percent of patients. (See WARNINGS.)

**Cough:** See PRECAUTIONS, Cough.

**Clinical Laboratory Test Findings; Serum Electrolytes:** See PRECAUTIONS.

**Creatinine, Blood Urea Nitrogen:** In controlled clinical trials minor increases in blood urea nitrogen and serum creatinine, reversible upon discontinuation of therapy, were observed in about 0.6 percent of patients with essential hypertension treated with VASERETIC. More marked increases have been reported in other enalapril experience. Increases are more likely to occur in patients with renal artery stenosis. (See PRECAUTIONS.)

**Serum Uric Acid, Glucose, Magnesium, and Calcium:** See PRECAUTIONS.

**Hemoglobin and Hematocrit:** Small decreases in hemoglobin and hematocrit (mean decreases of approximately 0.3 g percent and 1.0 vol percent, respectively) occur frequently in hypertensive patients treated with VASERETIC but are rarely of clinical importance unless another cause of anemia coexists. In clinical trials, less than 0.1 percent of patients discontinued therapy due to anemia.

**Liver Function Tests:** Rarely, elevations of liver enzymes and/or serum bilirubin have occurred.

Other adverse reactions that have been reported with the individual components are listed below and, within each category, are in order of decreasing severity.

**Enalapril Maleate:**—Enalapril has been evaluated for safety in more than 10,000 patients. In clinical trials adverse reactions which occurred with enalapril were also seen with VASERETIC. However, since enalapril has been marketed, the following adverse reactions have been reported: **Body As A Whole:** Anaphylactoid reactions (see PRECAUTIONS, Hemodialysis Patients); **Cardiovascular:** Cardiac arrest; myocardial infarction or cerebrovascular accident, possibly secondary to excessive hypotension in high risk patients (see WARNINGS, Hypotension); pulmonary embolism and infarction; pulmonary edema; rhythm disturbances including atrial tachycardia and bradycardia; atrial fibrillation; hypotension; angina pectoris; **Digestive:** Ileus, pancreatitis, hepatic failure, hepatitis (hepatocellular [proven on rechallenge] or cholestatic jaundice), melena, anorexia, glossitis, stomatitis, dry mouth; **Hematologic:** Rare cases of neutropenia, thrombocytopenia and bone marrow depression. Hemolytic anemia, including cases of hemolysis in patients with G-6-PD deficiency, has been reported; a causal relationship to enalapril has not been established.

**Nervous System/Psychiatric:** Depression, confusion, ataxia, peripheral neuropathy (e.g., paresthesia, dysesthesia); **Urogenital:** Renal failure, oliguria, renal dysfunction (see PRECAUTIONS), flank pain, gynecomastia; **Respiratory:** Pulmonary infiltrates, bronchospasm, pneumonia, bronchitis, rhinorrhea, sore throat and hoarseness, asthma, upper respiratory infection; **Skin:** Exfoliative dermatitis, toxic epidermal necrolysis, Stevens-Johnson syndrome, herpes zoster, erythema multiforme, urticaria, pemphigus, alopecia, flushing, photosensitivity; **Special Senses:** Blurred vision, taste alteration, anosmia, conjunctivitis, dry eyes, hearing.

**Miscellaneous:** A symptom complex has been reported which may include a positive ANA, an elevated erythrocyte sedimentation rate, arthralgia/arthritis, myalgia/myositis, fever, serositis, vasculitis, leukocytosis, eosinophilia, photosensitivity, rash and other dermatologic manifestations.

**Fetal/Neonatal Morbidity and Mortality:** See WARNINGS, Pregnancy, Enalapril Maleate, Fetal/Neonatal Morbidity and Mortality.

**Hydrochlorothiazide:**—**Body as a Whole:** Weakness; **Digestive:** Pancreatitis, jaundice (intrahepatic cholestatic jaundice), sialadenitis, cramping, gastric irritation, anorexia; **Hematologic:** Aplastic anemia, agranulocytosis, leukopenia, hemolytic anemia, thrombocytopenia; **Hypersensitivity:** Purpura, photosensitivity, urticaria, necrotizing angitis (vasculitis and cutaneous vasculitis), fever, respiratory distress including pneumonitis and pulmonary edema, anaphylactic reactions; **Musculoskeletal:** Muscle spasm; **Nervous System/Psychiatric:** Restlessness; **Renal:** Renal failure, renal dysfunction, interstitial nephritis (see WARNINGS); **Skin:** Erythema multiforme including Stevens-Johnson syndrome, exfoliative dermatitis including toxic epidermal necrolysis, alopecia; **Special Senses:** Transient blurred vision, xanthopsia.

\* Based on patient weight of 50 kg.

For more detailed information, consult your DuPont Pharma Representative or see Prescribing Information.

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**T**he Louis Vieux ("Old Louis") elm tree was named by a farmer on whose land it was discovered near Louisville, east of Wamego in Pottawatomie County.

Most trees, of course, do not merit names, but the Louis Vieux is not just any old tree. In 1979 it was designated as the largest known elm tree in the United States — our champion elm — by the National Forest Service. Of course, like any holder of a "best," "most," or "biggest" title, this Kansas giant has had challengers. It even lost its title for a time, when a larger elm was discovered in Virginia in 1985. But the Fates are nothing if not fickle, and the challenger took sick and died in 1988. The Louis Vieux was the champion again. Our cover illustration, by Jim Hamil, shows it in its prime, during a pruning by volunteers from the Kansas Arborists Association. There are no other elms nearby, so the tree has escaped Dutch elm disease — so far.

The story of this tree's life might have been written by a Greek dramatist, for its trials were not over yet. Perhaps the tree suffered a tragic flaw such as too much pride in its preeminence. In any case, in 1992 it was struck by lightning and lost one of its major limbs. (When you're the tallest thing for miles around, you should expect trouble.) This, no doubt, was a humbling experience, since it resulted in a loss of 25 percent of the champ's size. After the mishap, the Topeka *Capital-Journal* ran a sad-looking photo of the now-lopsided giant.

Despite the loss, the tree is still 100 feet tall, with a girth of 26 feet. This "one-tree forest" can be seen (and it should be seen) by taking K-99 west from Wamego to Louisville and turning left at Mother's Country Tavern along the Oregon Trail Road. The road has many twists and turns, and Mother's is used to giving directions. (Aren't they all?) Incidentally, across the Vermillion River is another historic attraction: a cemetery containing the bodies of cholera victims from the Oregon Trail era. Both it and the tree are maintained by the Pottawatomie County Historical Society.

We don't know what the Fates ultimately hold in store for our home-grown champion, or whether its story will prove to be a comedy or a tragedy. But at the present, the intermission so to speak, our hero's leafy head is "bloodied but unbowed."

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In January 1935, a new logo appeared on the cover of KANSAS MEDICINE for the first time. This device represents two stethoscopes: the original monaural type as used by Laennec, and the modern binaural variety. The logo was designed expressly for KANSAS MEDICINE by renowned graphic designer Bradbury Thompson, a native of Topeka and friend of two former editors of the journal, Dr. W.M. Mills and Dr. Lucien Pyle. As another former editor, Dr. Orville R. Clark, wrote in January 1955, the logo "has become as much a part of the journal as any of the features on the inside and is something which is ours alone."



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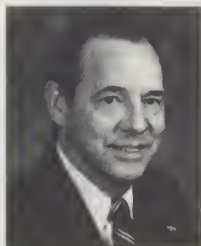
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# Why Is Everyone Mad at Everyone Else?

**H**ave you noticed how everyone seems to be mad about something, or someone else, these days? It's not just on the other side of the world now — it's in our own state and our own communities as well.



The reason varies from conflict to conflict. It might be differences in race, religion, gender, income, politics, or any number of others that may or may not make sense (at least to us), and that in another place and time might have been taken lightly or ignored. But today disagreements over such reasons erupt into sudden violence. It seems we have lost our sense of humor and the ability to laugh at ourselves. The most insignificant remark or slight is suddenly an attack upon our person or invades our "rights" and must be avenged.

In Wichita, the smoldering animosity between the pro-life and pro-choice groups recently culminated in the shooting of Dr. George Tiller. State-wide and nationwide increases in drive-by shootings have resulted in laws with stiffer penalties, yet these incidents continue. Product- and professional-liability suits increase the cost of goods and services, produce gridlock in the judicial system, and add to the bad feelings among individuals.

Riots may follow professional sports championship games or jury verdicts that leave one side displeased with the outcome. The murder of innocent persons because of differing ethnic background or skin color is often followed by retaliatory acts, heaping violence upon violence. The problems in Kansas are mirrored and multiplied around the nation. The bombing of the World Trade Center in New York City brought terrorism to our shores and showed us that we are no longer immune from such dangers on our home turf. Despite all our money and efforts spent abroad, we are hated by much of the world.

Nor are other countries much better off than we are. As of this writing, many parts of the globe are locked in bitter civil conflict. The oldest is that between the Israelis and the Palestinians. Despite the peace initiative, this one may prove insoluble because of the hatred that has grown ever-deeper with each new assault by one side against the other. Northern Ireland is probably the sec-

ond-oldest and most likely carries the same dismal prognosis for the same senseless reason. Lebanon, Somalia, Bosnia, Nicaragua, and the former USSR continue to keep the dogs of war unleashed.

Is there a treatment or antidote for this epidemic of madness? The Humanist Manifesto wants to get rid of religion and sexual inhibitions, abolish all forms of discrimination (through political correctness), redistribute wealth evenly, advocate situational ethics, and use reason and logic to bring about peace and prosperity for everyone. If memory serves me correctly, it's already been tried. The Soviet Union and Yugoslavia met most of those conditions under communism, and we are witnessing their efforts to recover from that miserable failure. The strife we now see in those countries is due to the search for their national or religious identity, and to their efforts to shake off the yoke of oppressive government.

Sadly, religion itself has failed to prevent or end these conflicts and in some cases has even been the basis for the strife. Sometimes different religions disagree, but in some cases it is differing denominations of the same religion, such as in Northern Ireland. Spokesmen for both sides decry the violence and claim that the zealots do not reflect the true teachings of their faiths. So it appears that mankind is again using religion to advance our own agendas and desires, even though such efforts in the past have always failed.

Is there an explanation for the madness around us? The Bible offers: "Even of your lusts that war in your members . . . Ye lust and have not: ye kill, and desire to have, and cannot obtain: ye fight and war, yet ye have not." (James 4: 1-2) Psychiatrists and psychologists tell us that poor self-image, insufficient self-esteem and the inability to handle and resolve conflict have much to do with the problems of the modern age. Rush Limbaugh refers to it as "get-evenism." Pogo, the cartoon opossum and political observer, said, "We have met the enemy, and he is us!"

Perhaps it is time for everyone to pause and really examine herself or himself in light of the wisdom offered by these authorities, both sacred and secular, and consider what one person can do to make things different. In closing, I urge you to read the accompanying poem, whose au-



thorship is unknown, but whose message speaks to us all. W.E.M.

### THE COLD WITHIN

Six humans trapped by happenstance  
in dark and bitter cold  
Each one possessed a stick of wood  
or so the story's told.

Their dying fire in need of logs  
one woman held hers back  
For on the faces around the fire  
she noticed one was black.

The next one looking across the way  
saw one not of his church  
And couldn't bring himself to give  
the fire his stick of birch.

The third one sat in tattered clothes  
and gave his coat a hitch —  
"Why should my log be used  
to aid the idle rich?"

The rich man just sat back and thought  
of the wealth he had in store  
And how to keep what he had earned  
from the lazy, shiftless poor.

The black man's face bespoke revenge  
as the fire passed from his sight  
For all he saw in his stick of wood  
was a chance to spite the white.

The last man in this forlorn group  
did naught except for gain  
Giving only to those who gave  
was how he played the game.

Six logs held tight in death's still hands  
was proof of human sin  
They didn't die from the cold without  
They died from the cold within.

*Anonymous*

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Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it; however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

**Indications:** Yocon® is indicated as a sympathicolytic and mydriatic. It may have activity as an aphrodisiac.

**Contraindications:** Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

**Warning:** Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

**Adverse Reactions:** Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.<sup>1,2</sup> Also dizziness, headache, skin flushing reported when used orally.<sup>1,3</sup>

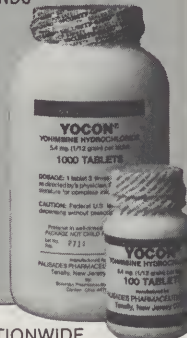
**Dosage and Administration:** Experimental dosage reported in treatment of erectile impotence.<sup>1,3,4</sup> 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to 1/2 tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.<sup>3</sup>

**How Supplied:** Oral tablets of Yocon® 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.

#### References:

1. A. Morales et al., New England Journal of Medicine: 1221. November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

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# Midwest Summit on Health Care Reform

**O**n October 29, I (and 2,500 others) attended the Midwest Summit on Health Care: Rx for Reform, in Kansas City's Bartle Hall. This daylong conference, co-chaired by Senators Bob Dole, Nancy Kassebaum, John Danforth and Christopher Bond, brought First Lady Hillary Clinton and other experts to Kansas City to discuss the health care reform proposals now under consideration in Congress.



In his introductory remarks, Senator Dole stated that there seems to be uniform agreement on the need for reform, even though most Americans agree that health care now delivered in the United States is superb.

The first speaker was Uwe Reinhardt, Ph.D., a health economist from Princeton University, whose discussion centered on the serious nature of health reform and the need for an American solution reached in a bipartisan manner. The question now, according to Dr. Reinhardt, is not whether reform is going to occur, but when and how this will happen. He described the situation as a fork in the road at which the choices are either managed competition or the current fee-for-service system. Dr. Reinhardt believes *managed* competition is a misnomer for *regulated* competition. There are, he observed, many problems with the uninsured, whom he characterized as people who have "un"surance due to their pre-existing conditions and being dropped by their insurance companies when they become ill. He expressed the strong need for affordability and then presented a lucid comparison of the numerous reform proposals now before Congress.

The next speaker was Senator John McCain of Arizona who, incidentally, has the unfortunate distinction of being the POW held for the longest time during the Vietnam War. Senator McCain also predicted that reform will happen. The only question, he said, is what kind it will be. He made the excellent (and dramatic) point that the 1965 Medicare law was laid out in only 34 pages, while the Clintons' Health Security Act is 1,336 pages, weighs 4½ pounds and — I can speak from personal experience here — costs \$8.50 for delivery by Federal Express from Washington. Senator McCain also observed that the health care system in the United States is clearly the best in the world.

Senator McCain said that among the 15% of the population which is uninsured, about 13% are *temporarily* uninsured. Only 2% are long-term

uninsured individuals. He emphasized the need for permanence of insurance, affordability, elimination of pre-existing conditions, and a deceleration of rising costs. He noted the lesson of catastrophic health insurance, which was passed and then quickly repealed by Congress a few years ago. Although it involved only a small increase in premiums to Medicare beneficiaries, it was perceived as costing too much and gaining too little. Therefore, constituents demanded its repeal.

The Republican alternatives were presented by Rhode Island Senator John Chafee and Oklahoma Senator Don Nickles. The main points of the Chafee plan are replacing mandated employer coverage with mandated individual responsibility to obtain insurance; and allowing an option for alliances rather than mandating them, as the Clinton plan would do.

Presenting the Clinton plan was Judith Feder, Ph.D., a Deputy Assistant Secretary in the Department of Health and Human Services. Frankly, her presentation consisted mostly of slogans such as "health care for all" and "health care that will always be there" and other gimmicky rhetoric with no substance or details. She reiterated the fear of skyrocketing costs, which may overwhelm the gross national product if left unchecked, and emphasized the issues of security, savings, simplicity, choice, quality and responsibility outlined by the President on September 22.

After lunch Senator Nancy Kassebaum introduced the First Lady. Mrs. Clinton spoke vigorously for the administration's health plan. She provided few details, but effectively articulated her interest, knowledge and sincerity on the issue of health care reform. Although she took questions about the plan, in my opinion the most cogent questions were glossed over with catchy, canned responses.

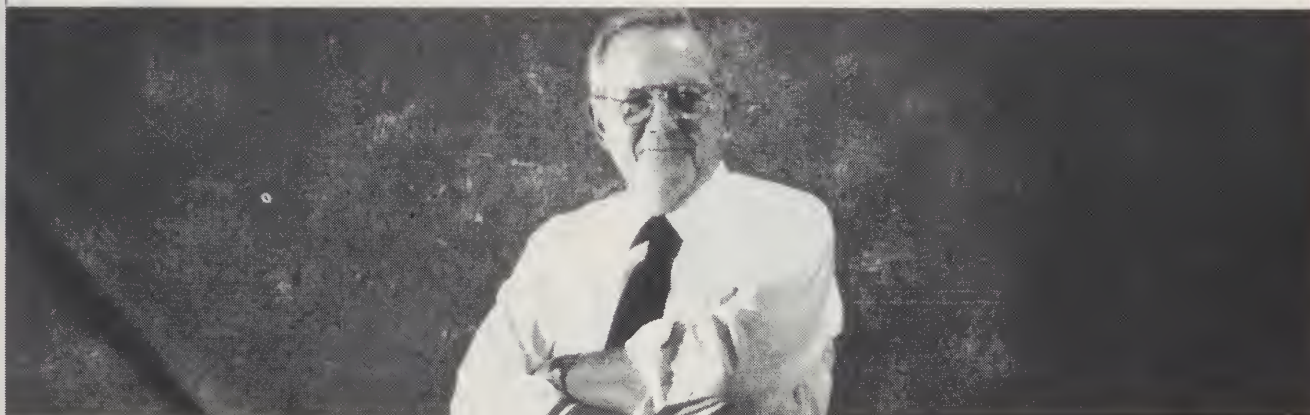
The afternoon session centered around panel discussions by a wide variety of public officials, insurers, health care providers and other "stakeholders" in health care reform. Robert Blendon, Ph.D., a researcher on public opinion from the Harvard School of Public Health, commented that while Americans want health care reform, no consensus yet exists on just which direction the country should take.

As might be expected, the "spin" put on the conference by several commentators was that this meeting represented the beginning of a bipartisan effort to achieve health care reform. Both Mrs. Clinton and Senators Dole and Chafee made a point of talking about the need for collaboration

(Continued on page 272.)



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# Hospital Staff Privileges and Liability

WAYNE T. STRATTON, J.D.,\* *Topeka*

In a case decided in September, the Kansas Court of Appeals answered the question posed at right in the negative. In *McVay v. Rich*, the plaintiff claimed the physician negligently performed a hysterectomy and that as a result of his negligence, she was required to undergo additional surgeries.



The patient also claimed that the hospital where the hysterectomy was performed was negligent in not properly providing or performing a quality assurance program, or taking corrective action to suspend or revoke the doctor's privileges when the hospital knew, or should have known, his privileges had been withdrawn at other area hospitals.

The trial court sustained the hospital's motion for summary judgment, and this was upheld on appeal. While the Supreme Court might still review and possibly modify the decision, the opinion is well reasoned and soundly granted on Kansas statutes.

The case turned upon the interpretation of K.S.A. 65-442 (b), which reads:

There shall be no liability on the part of and no action for damages shall arise against any licensed medical care facility because of the rendering of or failure to render professional services within such medical care facility by a person licensed to practice medicine and surgery if such person is not an employee or agent of such medical care facility.

The court, speaking through Chief Justice Retired David Prager, traced the numerous statutes enacted since 1976 to show the increase in medical malpractice premiums. While a hospital is required to have a risk management program, it is

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## Is a hospital liable for negligently granting privileges?

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not liable for compliance with, or failure to comply with, the requirements. Further, members of peer review committees are immune from liability if they act in good faith and without malice, and the medical staff operates pursuant to written by-laws that have been approved by the governing board of the facility.

In order to avoid duplicate premium payments for essentially the same risk, the legislature provided that one health care provider is not vicariously liable for the acts of another. The court concluded that these statutes and others show "the legislature's unmistakable intent to limit the liability of health care providers and medical care facilities."

Following this analysis, the court concluded that a hospital cannot be held liable for damages because of the rendering of, or failure to render, professional services within the hospital. Further, this rule is applicable even though the hospital was negligent in screening the competency of its medical staff and knew, or should have known, that the negligent physician was incompetent.

In 1976 Kansas physicians and other health care providers pledged to fund a mechanism to provide reasonable compensation for patients injured as a result of malpractice. Significant costs have been assumed by the health care community, and not all of the goals have been reached. Several inequities remain, notably the antediluvian collateral source rule; however, the instant decision acknowledges the legislature's rational modification of the common law to avoid unnecessary litigation in a manner which still preserves the plaintiff's cause of action against the tortfeasor.



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\*KMS Legal Counsel.

Comments appearing herein are not intended as a substitute for legal analysis or advice. Answers to legal questions depend largely upon the particular facts of a case. The reader is urged to consult an attorney for answers to specific legal questions.

These comments do not necessarily represent the views of KANSAS MEDICINE, or the Kansas Medical Society. For further information, contact Mr. Stratton, 515 S. Kansas, Topeka, KS 66603, 1-800-332-0248.



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# The Grand Essentials: A Mid-Year Assessment

**D**ear Physicians of Kansas, It's very hard to believe, but as you receive this edition of the journal, one-half of the KMS/KMSA year has been completed. When I was telling this to a very good friend recently, she said, "Yes, but have you completed one-half of your work for the year?" That really puts it all in perspective! It seems there is always more to do, and the more you accomplish the more you see there is yet to be accomplished.



So far this year your Alliance has accomplished the following:

- held a summer County Workshop in Wichita on July 20 for all county auxiliary/alliance officers and chairmen. This was a time for sharing ideas and leadership skills for the year ahead;
- held the fall Board Meeting and Conference in Hays on September 22 and 23;
- participated as a sponsor and organizer of the 17th Annual Governor's Conference for the Prevention of Child Abuse and Neglect, this year titled "Building Momentum for Children," held in Topeka on October 20-22; and
- published a newsletter.

Also, at this point I have visited a majority of the auxiliary/alliance groups in the state and attended numerous Council meetings with Dr. Snow and the KMS staff.

Yes, much work has been accomplished, but there is much still to do! Joseph Addison wrote, "The grand essentials in this life are something to do, something to love, and something to hope for."

Something to do is not a problem for me as Alliance President, or for you as physicians in

Kansas. There is a need for the services of physicians throughout our state. As I travel in Kansas, I hear physicians' spouses talking about the need for more physicians in their communities. I think of the past weekend in my own home when my husband was answering calls and traveling to the hospital constantly. It is very difficult for people outside of the medical family to understand the time physicians must spend on their busy practices. It seems we are always looking for new physicians with the hope of being able to serve more patients more efficiently. There is plenty for Kansas physicians to do!

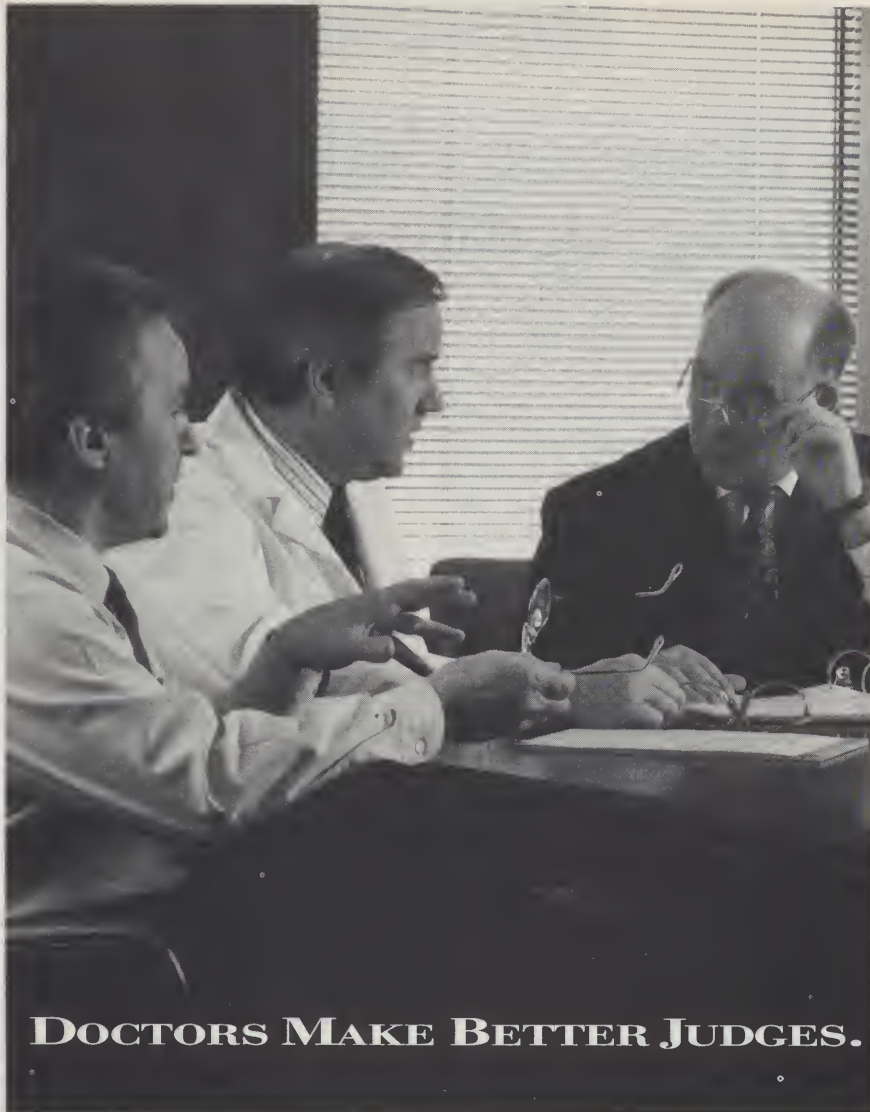
Something to love is a crucial part of life. Medical marriages and medical families take special care and constant work to keep them strong. When the physician is working long hours, it is not always easy to keep everything on an even keel at home. The children's activities are missed, the spouse feels alone with many decisions and responsibilities, and stress in the family can result. Both spouse and physician need to constantly work at sharing and expressing love within the family.

Something to hope for — we hope for well-thought-out, informed decision making on health care reform issues. We hope the decisions will not be made in haste, and we hope the outcome will be for the benefit of patients in Kansas and for quality medicine throughout our country.

As the year moves rapidly on, we aim toward those grand essentials in life: to do our best, show our love to our families and face the coming changes in medicine with hope.

*Cathy Wilcox*





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# A Core Electronic Medical Library in a Rural Setting: Update

SATY SATYA-MURTI, M.D.,\* *Parsons*

**A**bstract: In rural areas an electronic medical library is one of the most effective ways of staying abreast of advances in clinical medicine. A health care provider's educational needs for staying current are best met by a combination of CD-based textbooks and an inexpensive on-line database. Since publication of this review last year, several beneficial changes have occurred. In general, they are: greater availability of fast data transmission rates, wider selection of databases to choose from, both on-line and off-line, the feasibility of obtaining toll-free access numbers in selected instances, and the elimination of daytime higher connect rates. This update discusses some of these changes.

**First Mouse:** "When I first went out into the world, . . . I fancied, as so many of my age do, that I already knew everything, but it was not so. . . ."

**Third Mouse:** "I did not travel . . . I stayed in this country: that was the right way. One gains nothing by travelling — everything can be acquired here quite as easily; so I stayed at home." (From *Soup from a Sausage Skewer*, by Hans Christian Andersen, 1872.)

This dialogue between Andersen's rodent scholars seems to have some contemporary relevance. Rural medical practitioners, both generalists and specialists, should have a broad-based practical medical knowledge. They face a variety of familiar and unfamiliar medical problems, and instant consultation with colleagues possessing focused expertise is quite difficult. Individual practitioners may have to manage situations even outside their purview until expert help materializes, either in person or through telemedicine. Print and broadcast media disseminate awareness of recent medical advances and technological tours de force. Thus, the health care consumer's expectations often outstrip the resources available to the rural provider. These are inherent problems that rural medicine will likely face for some years to come. Dean Johns of Hopkins School of Medi-

cine emphasizes the need for "... advanced information and imaging systems that give the generalist physician and other front line professionals access to essential medical resources, no matter where they practice."<sup>1</sup> A Canadian study finds that a central computerized medical information system is of considerable value to rural doctors.<sup>2</sup> Another study indicates that family physicians often obtain information from books and colleagues, rather than from computers or journals.<sup>3</sup> This situation, perhaps a reflection of attitude rather than availability, may change if retrieval sources become inexpensive to own and very easy to operate. Indeed, we do have a powerful ally in the form of electronic information resources. These will not remedy all of the problems we face in rural areas. They will ensure, however, that staying current is within everyone's reach.

In this update I wish to highlight some of the beneficial changes that have been introduced this year in this field. Other basic information from last year's review (October and November 1992) still remains valid. The information I include is necessarily selective in some instances, and my advice has been clearly slanted towards the needs of a generalist or specialist practicing in a rural area. The phone numbers for individual services and vendors were included in last year's reviews.<sup>4</sup>

## Changes in On-Line Resources

Some of the services introduced several positive changes this year. Most now offer 9600 bps (bits per second) data transmission without levying a higher charge. Coincidentally, the price of MODEMs has come down. Some further changes may have occurred by the time this paper appears in print. It is best to call and check with each service or vendor before committing yourself to a purchase or subscription. A description of the individual changes follows:

*Grateful Med (GM).* At the beginning of this year, National Library of Medicine (NLM) ushered in several changes. Many services charge a higher rate for access during prime time, but such is not the case with NLM any longer. Thus as of

\*Address correspondence to S. Satya-Murti, Labette County Medical Clinic & Center, Parsons, Kansas 67357.



this year, a daytime search at 9600 bps is no more expensive than an evening (non-prime-time) search. NLM might now provide a toll-free access number under certain circumstances. It is best to explain to NLM your particular situation at the time of initial application for services. Those of us in rural areas should be particularly appreciative of this, since most of our communities have no local numbers for these services. We find the phone charges an unrelenting and annoying burden, and yet we are the users with a heavy need for on-line data. The connect and display charges have also been reduced. Average cost of a pre-formulated search using NLM's own software (Grateful Med version 6.0, updated 1993) has fallen by 40% from past years. A typical search for a clinical question costs between \$1.00 and \$2.00. The software works flawlessly. Not only MEDLINE, but also several other NLM databases may be accessed via this software.

As in the past, only abstracts or titles, but not full text, of cited articles are available. If a particular article is of sufficient interest, its full text may be obtained through other means. One method is to request the full article on-line through "Loansome Doc," part of the Grateful Med software. This request is transmitted to a regional library for processing. Another method is to request the article, for a fee, through AMA (American Medical Association) or KUMC (University of Kansas Medical Center). The NLM 800 number for assistance continues to be busy, but excellent help is available for the patient user.

**Knowledge Index (KI).** This service has moved to CompuServe (CS). All previously available features continue without modification. EMBASE (Excerpta Medica data) and MEDLINE are accessible at 9600 or 14,400 bps. There is no monthly flat fee. Software designed for accessing CS will now reach KI also. Quality of service continues to be excellent. The KI section of CS has a separate toll-free voice number for questions (1-800-438-3690); it is often answered at the first ring!

**US HealthLink (USHLNK).** Since its introduction last year, this service has grown. There is no additional charge for prime-time use. It offers EMPIRES (Excerpta Medica) and MEDLINE data bases, and a host of other services for a flat monthly fee which includes an unlimited 4 hours of usage each month. EMPIRES apparently introduces citations into its database faster than the EMBASE version of Excerpta Medica services. Some attractive features are a clipping service to

alert you to recent developments in your area of interest, a drug interaction dataset (Medicom), a diagnostic decision service (DXplain) and news services.

**BRS (Bibliographic Research Service) and PC (PaperChase)** offer valuable services, as before. BRS provides a Journal Watch service that abstracts fast-breaking medical news from prestigious peer-reviewed journals, on a weekly, or more frequent, basis. Full texts of articles from several leading journals are also available in BRS. While this feature is quite valuable, inclusion of articles from some journals is several months behind. In PC you can carry out simultaneous searches from not only MEDLINE but also AIDSLINE, CANCERLIT and other health databases, thus avoiding duplication of the search effort. In the accompanying table, I compare the features of these services.

### Changes in Off-Line Resources

Compact discs (CDs) continue to dominate this area. All of the discs mentioned in last year's review are available. Multimedia products — which include sight (text, graphics, animation) and sound — are likely to dominate the market soon.

TABLE 1. MAJOR FEATURES OF SOME ON-LINE SERVICES

Service	Database	Other Features	Transmit (bps)	Available	Day time Rate	Toll free #
GM	M A	Monthly flat fee = No. D**	2400 & 9600	24 Hrs	No higher	Yes, selectively
BRS	M & EM B	Full text of some journals. Monthly flat fee = Yes. D**	2400 & 9600	24 Hrs	Higher	No
KI <sup>Ⓟ</sup>	M & EM	No display charge. Monthly flat fee = No	2400 & 9600 <sup>K</sup>	Select hours only	Service not available day time	No
USHL	M & EM* C	No display charge. Monthly flat fee = Yes, but provides 4 hrs.	2400 suggested	24 hrs	No higher	No
PC <sup>Ⓟ</sup>	M *	Monthly flat fee = No	2400 & 9600	24 hrs	Minimally higher	Yes, selectively

M=Medline, EM= Excerpta Medica, EM\*= Empires version of Excerpta Medica.

M\*= Simultaneous search of Medline and other NLM databases (AIDS, Cancer, Health) possible.

K= 14.4k bps may be available in near future.

A= Other NLM databases- Toxline, Chemline, Cancerlit, Aidsline etc.

B= Journal Watch, C= Clipping service, D\*\*= Document display charges apply.

KI <sup>Ⓟ</sup> =Available only through CompuServe. PC <sup>Ⓟ</sup> = Available independently, and through CompuServe.

Portable, hand-held information devices and small-size CD drivers have also appeared on the market. The hardware (CD driver) prices have come down. Unfortunately, disc prices show no signs of softening. The vendors' explanations for this are interesting but not really credible to me. Additional hardware is required for multimedia, but as of this writing, I suggest waiting before purchasing this. Software availability is not always well advertised in the commonly read medical journals; there is room for improvement here.


SAM-CD is the new name of *Scientific American's* textbook of medicine. Known as Consult formerly, it provides comprehensive coverage of internal medicine. This CD is DOS-based, easy to search, and its graphics are stunning in quality.<sup>5</sup> MAXX is a very practical CD that includes Little Brown's spiral manuals, some 21 in all. It is Windows-based and is an extremely useful ready reference tool.<sup>6</sup> STAT-REF (1-800-755-7828) is another CD, containing the Appleton Lange series of annually updated books in various specialties. You may buy only those books needed for your specific needs, thus minimizing the subscription cost; this is an attractive feature. This is also Windows-based, and worthy of serious consideration for the library. All of these vendors are striving

to improve their products. I strongly urge calling them to discuss your individual needs and their planned product improvements before subscribing. SilverPlatter's MEDLINE CDs are also on the market, and the vendor has released multimedia CDs designed to serve as a learning tool. More multimedia products are in the offing. CDs exclusively devoted to full texts of journals, including graphics, is a forte of CMC, a vendor who continues to offer the Mosby Year Books on CD. There are other vendors also who produce journal CDs. Resource Systems Management, Inc. (1-800-242-2638) puts out an annually updated, reasonably priced disc called "Computer Insight MD" that lists nearly all resources — software, hardware, educational and practice management services and vendors' names — that are useful for physicians.

### Conclusions

A rural health care provider's educational needs for keeping current are best met by a combination of CD-based textbooks and an inexpensive on-line database. At this time, a textbook CD, such as SAM-CD, a practical multispecialty tool such as MAXX, and an on-line MEDLINE resource through GM are my recommendations. Effective

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access to MEDLINE via a CD is a slightly less desirable, but reasonable, alternative. I expect that my recommendations, necessarily experiential, could well be at variance with those of other users. Such variant suggestions, if helpful to rural needs, would be worth hearing about.

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# Rural Health Manpower Issues Affecting Older Kansans

ANALEE E. BEISECKER, Ph.D., *Kansas City*

**T**he aging of the U.S. population is generating increased concern among health care providers and policymakers regarding older persons' utilization of health care services and the availability of health manpower to meet their needs. Americans over 65 years of age will constitute 21.8% of the total population by the year 2030. The population over 75 years of age is currently the fastest-growing group.<sup>1</sup>

Older persons are disproportionately heavy users of health services and make many visits to their doctors.<sup>2,3</sup> An older population will require expansion of health services including preventive, primary, long-term, hospice and rehabilitation care. Many of these services will be delivered in home-based settings, and the care of older persons may typically comprise one-third to two-thirds of the future workload of health care personnel.<sup>4</sup>

The impact of chronic health problems increases with age. From ages 65 to 74 years, one in nine persons has difficulty performing basic activities; at ages 75 to 84, the number is one in four; and at age 85 and older, almost three-fifths of the population (57.6%) experiences difficulty performing basic life activities.<sup>5</sup> In 1984, one-third of the community-dwelling population over age 65 had one or more functional deficiencies in activities of daily living (ADL); more than 2 million had difficulties with three or more ADLs. Approximately 25% of persons over age 85 had difficulties with three or more ADLs, and almost 60% of this age group were receiving assistance from another person.<sup>4</sup> The number of older per-

sons receiving help from another person is an important indicator of potential needs for health-related services.<sup>4</sup>

By utilizing health and rehabilitative services, persons with serious limitations in daily activity have significant opportunities to increase their capabilities so that they can function more effectively and independently. Of those over age 65 in 1982 who reported ADL limitations, 25% had improved function in 1984; one-third of interviewees aged 65–74 had improved function.<sup>4</sup>

Elderly persons tend to suffer from multiple health problems. In addition, their health problems more often are due to chronic conditions such as arthritis, cancer, diabetes or heart disease than to short-term acute illnesses. The chronic, multiple health problems of the elderly, particularly the frail elderly, require interdisciplinary activities on the part of health care providers for maximum success. Medical care for the elderly involves not only physicians, but also nursing and allied health personnel. The vast majority of disabled older persons receive all their care in the community.<sup>4</sup> In order to minimize travel problems for rural elders, many of whom can no longer drive to distant health care facilities, we need to be concerned about the availability of varied health care providers in rural communities.

The availability of allied health professionals is often necessary to maintain older persons at home with maximal functional independence.<sup>4</sup> Occupational therapists, traditionally involved in the rehabilitation of the elderly, are expanding their efforts to outpatient facilities, rehabilitation centers, adult day care programs and home health programs. The importance of physical activity to the maintenance and restoration of health is increasingly recognized by health care providers and the general public, thereby involving physical therapists in the care of older persons. The incidence of speech and hearing problems increases with age. Audiologists are important for the preservation of hearing and related benefits to well-being and self-maintenance of the elderly. Simi-

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larly, speech-language pathologists contribute to the improvement of elderly persons' ability to communicate.

Rural areas of the United States have a disproportionately high number of older residents. As a result, health manpower needs and shortages in rural areas particularly affect older Americans. Preventive measures and health education are especially important in rural areas where travel distances may impede effective use of services. Nurses and allied health personnel are capable of providing health education and coordinating disease prevention programs and activities. These personnel, when available, are a resource which should be utilized in rural communities.

Compared with other states, Kansas has a disproportionately high percentage of elderly residents. The state ranks 32nd in terms of total residents, but 13th in terms of the proportion of elderly to the total population.<sup>1</sup> The Kansas population over age 85 is expected to increase 24% between 1990 and the year 2000.<sup>4</sup>

Not only does Kansas rank high in the proportion of elderly residents, but the majority of aged Kansans live in, and to a large degree depend on the health care resources of, areas of the state designated as non-metropolitan, outside a metropolitan statistical area. Over two-thirds of elderly Kansans live in small towns and rural communities. In 45% of Kansas counties, the population over age 65 accounts for more than 20% of the total population (Figure 1). In nearly two-thirds of Kansas counties, 20% of the residents are 60 years of age and older. There are few other places in the United States with such a high percentage of elderly residents. Therefore, concern for health manpower to serve the needs of elderly Kansans, now and in the future, should be paramount.

The Kansas counties with a high percentage of elderly residents are among the most rural in the state. The current dependence of elderly rural Kansans on local health care resources is compounded because many rural areas of the state are medically underserved.<sup>6</sup>

A paradox arises when one tries to determine whether or not an area is medically underserved. Kansas is not a heavily populated state. Although there is a high percentage of elderly residents, their numbers are not large, and they are scattered over a wide geographic area. Hence, the elderly face problems encountered by other rural residents. The population base is not large enough to attract or profitably maintain many services, including those for health care, and the tax base

is inadequate to support comprehensive health care services. In addition, a large geographic area increases costs in time and money for home health care providers and presents transportation difficulties for patients.

Statistics regarding health care providers in counties with a high percentage of elderly residents show that the Kansas county with the highest percentage of older residents, Elk County, has the lowest full-time equivalent (FTE) of primary care providers for the elderly (internal medicine, family practice, geriatrics) per 100,000 population: 9.0. This number of primary care physicians seems adequate, but ranking counties by FTE/100,000 residents provides a distorted picture of health manpower and does a disservice to rural America. Nevertheless, this statistic is often used as a basis to determine medically underserved areas.

The population of Elk County is only 3,327, not 100,000. Instead of 9 primary care physicians, the actual FTE for the county is .3. Elk County covers 650 square miles. In short, one physician spends nearly 30% of his or her time serving the needs of a county with nearly 30% of its population over age 65 and scattered across 650 square miles. In this same county, there are no respiratory therapists, physical therapists, dentists or dental hygienists. There are, however, 31 nurses (16 RNs and 15 LPNs), one physician's assistant, one occupational therapist and two pharmacists.<sup>7</sup>

The percentage of older residents is an important figure because it indicates that there are persons in the county likely to have multiple, chronic health problems at the same time that there is a shortage of younger persons to care for

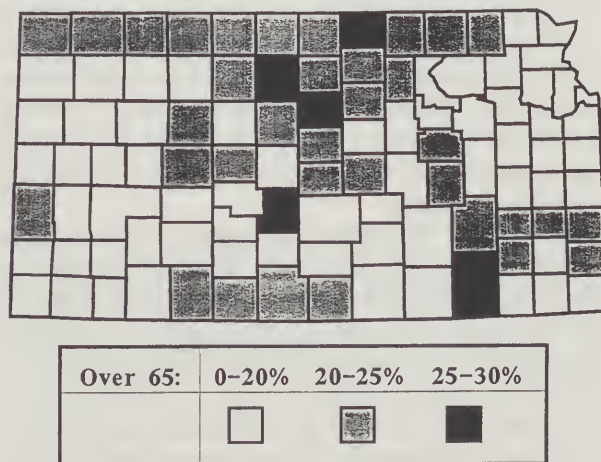


Figure 1. Kansas counties with 20% or more population over age 65 (1988).

TABLE 1.  
TOP 10 KANSAS COUNTIES BASED ON PERCENT OF ELDERLY (1990)\*

County	Area (sq. mi.)	Population/ sq. mi.	No. of Elderly	% Elderly	Primary Care		RN + LPN	PA	Pharm	RT	PT	OT	SPT	AUD
					Total	/100K								
Elk	650	5.1	770	29.7	0.3	9.0	31	1	2	0	0	1	0	0
Smith	897	5.7	1213	28.0	2.4	47.3	71	0	3	0	1	0	0	0
Republic	719	9.0	1671	27.8	3.7	57.1	88	0	3	2	1	0	1	0
Osborne	882	5.5	1269	27.0	3.3	67.8	40	0	2	0	0	0	1	0
Chautauqua	644	6.8	1174	26.5	4.0	90.8	48	3	3	2	0	0	0	0
Woodson	498	8.3	958	26.4	2.1	51.0	27	1	1	0	0	0	0	0
Washington	898	7.9	1717	26.3	3.2	45.2	77	0	4	0	0	0	0	0
Comanche	789	2.9	526	26.2	1.0	43.2	30	0	1	0	0	0	1	0
Lincoln	720	5.1	795	26.0	2.0	54.7	41	0	2	0	0	0	1	0
Greenwood	1135	6.9	1840	25.3	4.0	51.0	88	1	7	3	1	0	1	0

\*Data from Kansas Statistical Abstract 1990-91 and Kansas County Health Profiles, 1991

them. In attempting to justify the need for state and federal funds to help the elderly in rural areas, policymakers and academicians often cite the percentage of elderly residents.

However, a high *percentage* of older residents does not necessarily correspond to a high *number* of older residents. Of the 105 counties in Kansas, the 10 counties with the highest percentage of older persons do not overlap at all with the 10 counties with the highest number of older residents. The counties with the highest percentage over age 65 range from 25.3 to 29.7% elderly residents. Their 1990 county population over age 65 ranged from 526 to 1,840 and averaged 1,193. None of these counties has a total population density of more than 10 people per square mile, and five of the 10 counties have less than 6 persons per square mile (Table 1).

The 10 counties with the highest number of older residents range from 6,267 to 42,385 senior citizens. The four counties with the highest number of older residents are metropolitan counties (Sedgwick, Johnson, Wyandotte and Shawnee). Two other metropolitan counties (Leavenworth and Butler) also fall in the top ten, with the remaining metropolitan county, Douglas, ranking eleventh.<sup>8</sup>

What does this information tell us? If we target health care services on the basis of number of older residents to be served, those services would be targeted primarily to urban areas. If we look at geographic distances and percentage of elderly residents, rural areas would receive our attention.

We will now focus our discussion on 14 rural counties in Kansas: the 10 counties with the highest percentage of elderly residents and the four *rural* counties ranking in the top 10 in terms of

numbers of seniors.

Of the top 10 counties in terms of percentage of elderly, *none* has a geriatrician. The primary care FTE ranges from .3 to 4.0, with a mean of 2.6 (Table 1). The geographic size of the counties ranges from 644 to 1,135 square miles. In contrast, two of the four rural counties with the highest number of elderly residents have part-time geriatricians. The primary care FTE ranges from 16.8 to 29.9, with a mean of 23.5; the county size ranges from 595 to 1,259 square miles; and the older population ranges from 6,561 to 9,078 (Table 2). In these counties, the percentage of elderly residents ranges from 14.1 to 19.6 (mean: 17.3), indicating that these counties have more younger persons who might be available to serve the health needs of older residents.

Looking at the allied health manpower in the same 14 counties, we note in the counties with a high percentage of elderly residents there are very few respiratory therapists, physical therapists, occupational therapists, or speech therapists, and no audiologists (Table 1). Therapists are important to the recovery of patients from stroke, hip fracture and other conditions that frequently affect older people and thus play an integral part in home health care for the elderly. It is obvious from these figures that the 10 counties in Kansas with a high percentage of elderly people scattered over a vast county area are underserved with regard to therapists' services. The services, especially for home health care, are simply not available. Numbers of therapists per 100,000 population may not reveal these shortages. However, raw numbers and large areas reveal the fiscal impracticality of home health care for the rural elderly in Kansas.



Eight of the counties have at least two pharmacists, allowing for county coverage when one pharmacist is not available, although the number of pharmacists in seven of the 10 counties has declined in the past two years.

We now turn to the four rural counties that are in the top 10 Kansas counties for *number* of older residents (Table 2). Each of these counties has the services of at least one respiratory therapist, physical therapist, occupational therapist and speech therapist; two of the four counties have audiologists. Each of these counties also has many pharmacists. The higher-density population and proximity to urban areas makes practice in these areas more attractive and economically feasible.

In the very rural counties with a high percentage of older people, there is a shortage of health care personnel, especially geriatricians and therapists. Nurses are the primary professional caregivers. If we are to build on our available strengths, then geriatric education for rural nurses should be a priority, as should geriatric education for family physicians and internists. Looking at the health manpower data, it is no wonder that suggestions for increased autonomy for rural nurses and direct access to allied health care providers are made.

The bottom line is clear. Kansas counties with a high percentage of older residents have a relatively small *number* of older persons scattered over a wide area. The provision of home health and rehabilitative services to these seniors would probably not be economically feasible if delivered in the same manner as they are provided in urban areas. For example, in a rural county there may not be enough disabled residents at a given time to demand the full-time services of each type of therapist. However, creative use of providers may make provision of such care in rural areas feasible. Speech therapists could serve children in schools as well as older persons who have suffered strokes. A school and a nursing home or hospital/home health agency might share one speech-language

therapist. Schools and nursing homes could also share dietitians. Therapists might be cross-trained to provide both occupational and physical therapy. Nurses could be trained to provide some of the allied health services, much as they did prior to the specialization of allied health care providers.

In Kansas, therapists from urban areas are providing assessment clinics in rural areas. Patients' needs are assessed, a treatment plan is prepared, and family members and others are trained to provide the needed care. The compressed video network which is being developed to link hospitals and other sites throughout the state (see KANSAS MEDICINE, vol. 93, no. 12) could also be used to provide training and supervision of therapy providers such as nurses or family members by physical and occupational therapists based in urban areas. This network is already being used to provide specialty medical care and consultation (neurology, oncology, pediatric cardiology) in western Kansas.

Prevention programs might reduce, but not eliminate, the need for ancillary medical services in rural communities. Older rural residents could benefit particularly from preventive medicine, risk assessment and health education programs. Many falls resulting in hip fractures could be prevented by exercise programs for older persons and risk assessment of their living environments. Nutrition education and community prevention and screening programs may reduce the number of residents requiring therapy and home-based services. Nurses could provide or coordinate these programs.

Public and provider education, risk assessment and health promotion cost money, and it is often difficult to evaluate the cost effectiveness of such programs. However, health promotion and screening programs are less expensive than treating acute medical problems discovered in late stages. As a matter of public policy, we need to determine whether the advantages stemming

TABLE 2.  
RURAL COUNTIES IN TOP 10 KANSAS COUNTIES, BASED ON NUMBER OF ELDERLY (1990)

County	Area (sq. mi.)	Population/ sq. mi.	No. of Elderly	% Elderly	Primary Care		RN + LPN	PA	Pharm	RT	PT	OT	SPT	AUD
					Total	/100K								
Reno	1259	49.6	9078	16.2	29.9	47.9	658	5	40	8	11	5	12	2
Crawford	594	59.6	6885	19.6	16.8	47.2	426	0	25	8	1	2	5	0
Montgomery	646	60.1	7160	19.3	21.8	56.2	418	1	29	3	3	2	5	0
Saline	721	68.4	6561	14.1	25.4	51.5	689	3	40	9	15	5	5	2

\*Data from Kansas Statistical Abstract 1990-91 and Kansas County Health Profiles, 1991

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from provision of health promotion and risk assessment programs to rural areas, along with the psychosocial advantages to a patient of receiving home-based and ancillary medical services and health education in rural communities, outweigh the potential costs which may have to be subsidized in part by public funds.

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### PRESIDENT'S MESSAGE

(Continued from page 258.)

among both parties, the administration and all the interest groups. Clearly, the administration feels it essential to include the Senate Republicans in order for health care reform to have any chance of passage.

With the exception of Senators McCain and Nickles, who made some very pointed comments, most of the public officials at the summit were careful not to be too critical of each other. It was clear that both Republicans and Democrats in Congress agree on the general principles and goals of health care reform. However, the good manners and smiles will soon give way to vigorous disagreement and political posturing as the congressional committees begin their hearings in earnest. The debate will center on how the system will be controlled, and who will pay the bill.

If you wish to obtain your own copy of the Clinton reform plan, you may call 202-783-3238. After you get through the busy signals, then the automated phone system, you will reach an individual who can take your order for this mammoth document. For \$8.50 it can be delivered to you via Federal Express. For a small additional charge, you may order a 30-page "Health Security Preliminary Plan Summary," a "Benefits for Business" public relations piece, and an explanatory 136-page booklet, written for the general public, called "Health Security: The President's Report to the American People." These are items of importance to all of us, and I urge you to read them.

Arthur D. Snow, Jr., M.D.



# Disseminated Cryptococcosis with Hypothyroidism in an AIDS Patient

OSSAMA TAWFIK, M.D., Ph.D.,\* AND JAMES FISHBACK, M.D.,\* *Kansas City*

Infection with *Cryptococcus neoformans* is one of the common complications in patients with the acquired immune deficiency syndrome (AIDS).<sup>1-3</sup> The clinical manifestations may vary from complete lack of symptomatology to systemic dissemination and multi-organ failure.<sup>4</sup> While fungal involvement of the thyroid gland is relatively uncommon, its infiltration by cryptococcal organisms is exceedingly rare, with only one case reported in a diabetic, ethanol and intravenous drug abuser.<sup>5</sup> This report presents a unique case of involvement of the thyroid gland with cryptococcal infection and discusses involvement of the endocrine system in AIDS.

## History

A 33-year-old white male was transferred to the University of Kansas Medical Center with the diagnosis of cryptococcal meningitis. He was initially admitted to another hospital for complaints of nausea, vomiting, headache and blurring of vision, after being struck on the head by a light fixture at work. A spinal tap was performed and showed numerous cryptococcal organisms. The patient was subsequently found to have HIV infection by enzyme-linked immunosorbent assay (ELISA), confirmed by western blotting. The patient was a drug abuser but denied homosexual contact or blood transfusion. He did not have any other relevant medical history.

## Physical Examination

The patient was a well developed white male, with some mental confusion, but generally alert and oriented. Noteworthy physical findings included blurred vision, white plaques on the oral mucosa with erythematous borders and an enlarged lymph node in the left anterior cervical group. The abdomen was flat with mild guarding, diffuse mild tenderness and hepatosplenomegaly. Neu-

rologically, deep tendon reflexes were 2/5 and 0/5, in the upper and lower extremities, respectively. Motor functions were normal, and skin sensation and cranial nerves were intact. Thyromegaly was not observed.

Laboratory data on admission included a hemoglobin of 12.8 gm/dl; leukocytic count of 5,500/mm, with a normal differential; sodium 138 meq/liter; albumin 3.4 g/dl, total bilirubin 6.6 mg/dl; blood urea nitrogen 22 mg/dl and aspartate aminotransferase 45 IU/liter. Roentgenogram of the chest taken on admission revealed no abnormalities.

## Hospital Course

During hospitalization, the patient was started on zidovudine (AZT), but this was later discontinued due to myelosuppression. His cryptococcal meningitis was treated with Amphotericin B (0.5 mg intravenously, 3 times a week) and 5-fluorouracil (500 mg, intravenously, qid). The patient also received Benadryl (50 mg, intravenously) and morphine sulfate drip for pain control. Repeated lumbar punctures were positive for *Cryptococcus* organisms. The patient's serum revealed a cryptococcal antigen titer of 131,022.

The patient became hyponatremic, with sodium levels of 127 and 125 meq/liter on days 11 and 25 of hospitalization, respectively. Hypothyroidism was suspected as a possible cause of hyponatremia, and in the third week of hospitalization, the total T4 level was discovered to be 3.1 (normal 5.0 to 12.5 ug/dl). A thyroid-stimulating hormone (TSH) level of 9.9 (normal 0.4 to 4.6 uU/ml) was also documented.

He had multiple infections that included staphylococcal septicemia, treated with Nafcillin; cytomegalovirus urine positivity; *Escherichia coli* infection of the urinary system; hepatitis B virus infection with serum antigen and core antibody positivity; and oral candidiasis.

The patient's neurological status continued to deteriorate throughout his hospital stay. His vision gradually faded until he had a complete loss of sight. He was hypertensive throughout his hos-

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Figure 1. Thyroidectomy specimen showing near-total replacement of the right lobe by a tan-white fleshy mass. The left lobe is also partially destroyed. Note the presence of the residual normal thyroid tissue in the left lobe.

pitalization and was treated with Nifedipine (10 mg/6h and nitroglycerine patch). On his last day in the hospital, the patient had right lower lobe pneumonia with increasing headache and marked pancytopenia. His status further deteriorated, and he died on the 40th day of hospitalization.

### Autopsy Findings

The brain was edematous and weighed 1250 gm. The leptomeninges were markedly thickened and opaque. Cryptococcal meningoencephalitis with extensive liquefactive necrosis was evident throughout the brain. The basal ganglia were involved and showed marked cystic necrosis, bilaterally. The liver (2200 gm), spleen (950 gm), bone marrow, left anterior cervical, pulmonary

hilar, periaortic and mesenteric lymph nodes were also involved. The lungs, spinal cord, right adrenal and pituitary gland were only focally involved by cryptococcal organisms.

The thyroid gland weighed 19 gm. Grossly, the right lobe was totally replaced by a tan-white fleshy mass measuring 5x4x3 cm (Figure 1), with a smooth and glistening cut surface. Microscopically, the follicular structure of the gland was recognized with difficulty. There was marked involvement of the entire gland by cryptococcal organisms with extensive necrosis (Figure 2). This diagnosis was further substantiated by special studies including mucicarmine, Grocott's methenamine silver and periodic acid-Schiff stains.

In addition, there was bilateral focal acute and hemorrhagic bronchopneumonia with bacterial colonization and pulmonary edema. There was acute pyelonephrosis with patchy interstitial and tubular suppurative inflammation and abscess formation. The eyes were grossly and microscopically normal, suggesting that loss of vision in our patient was cortical in nature, rather than due to cytomegalovirus or cryptococcal infection, as suspected clinically.

### Comments

Patients with AIDS have an increased risk for *Cryptococcus neoformans* infection and are more likely to present with the disseminated form of this disease.<sup>1-3</sup> The disease has been reported to infect 5 to 14% of patients with AIDS.<sup>1-3</sup> The clinical manifestations of *Cryptococcus* have been defined and extensively reviewed.<sup>4</sup> The disease can be superficial or deep, localized or diffuse,

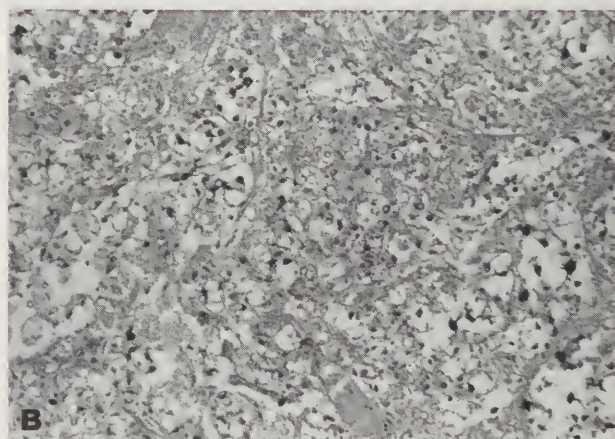
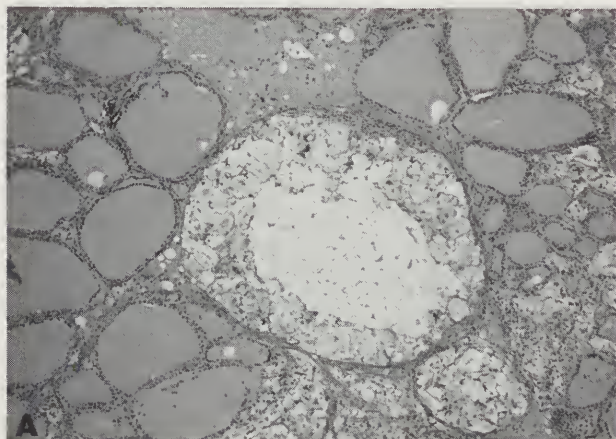


Figure 2. Photomicrograph of the thyroid gland depicting the partial involvement of the left lobe in (A) and near-total involvement of the right lobe (B). The follicular structure of the gland is hardly recognizable due to the massive involvement by cryptococcal organisms with extensive necrosis. (A: hematoxylin and eosin, original magnification,  $\times 100$ ; B: mucicarmine stain, original magnification,  $\times 200$ .)



and can selectively involve the meninges or the brain.

At autopsy, in the majority of AIDS patients, the leading immediate cause of death is usually respiratory failure. Organs of the endocrine system, such as the adrenals, are not uncommon sites for AIDS-related lesions. However, these sites may be difficult to diagnose premortem.

Fungal infection is an unusual cause of thyroiditis.<sup>5-10</sup> Only a small number of cases have been reported thus far in the literature. Virtually all of these have occurred in immunocompromised patients. Although *Candida*, *Aspergillus* and *Coccidioides* have been reported as causes of fungal thyroiditis, there is only one report of cryptococcal thyroiditis in the literature.<sup>5</sup> Acquired immune deficiency syndrome was strongly suspected in that patient; however, it was not documented.

Fungal and other infectious causes should always be considered in hypothyroid AIDS patients. Furthermore, the high degree of clinical suspicion should be emphasized, and fine-needle aspiration of the thyroid gland should be considered in such patients. Our patient presented with hyponatremia as the first sign of hypothyroidism. His obtundation probably prevented him from expressing other symptomatology characteristic of hypothyroid patients.

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# Outbreak of Pneumococcal Disease in a Kansas Nursing Home, 1993

**D**uring January and February 1993, an outbreak of pneumonia occurred in a nursing home in Kansas (see figure). During the previous two years, the mean number of hospitalizations for pneumonia was 1.2 cases per month (range: 0–3). In 1993, there were 6 hospitalizations for pneumonia in January and 10 in February. Data were abstracted for the 10 patients hospitalized during February 3–12, 1993.

All of the patients diagnosed had fever and/or cough and an infiltrate on chest radiograph. The median duration of hospitalization was 7.5 days (range: 4–16). Three (30%) of the patients died.

Five (50%) of the patients had positive blood cultures for *Streptococcus pneumoniae*. One (10%) additional patient had a positive sputum culture for *Streptococcus pneumoniae*. None of the isolates were available for serotyping.

Eight (80%) patients were female. The median age of the patients was 89 years (range: 83–99), and all were non-Hispanic whites. None were roommates or current smokers. Seven (70%) patients were ambulatory.

The nursing home is a single-story building that has 50 beds. There are 24 double rooms and two single rooms. The facility had an occupancy rate of 100% at the start of the outbreak. None of the staff were diagnosed with pneumonia.

Eight (80%) of the patients had received the influenza vaccine in October 1992. Two (20%) of the patients had received the pneumococcal vaccine in October 1985 and March 1987, respectively. Following the outbreak, all residents in the nursing home were immunized with pneumococcal vaccine.

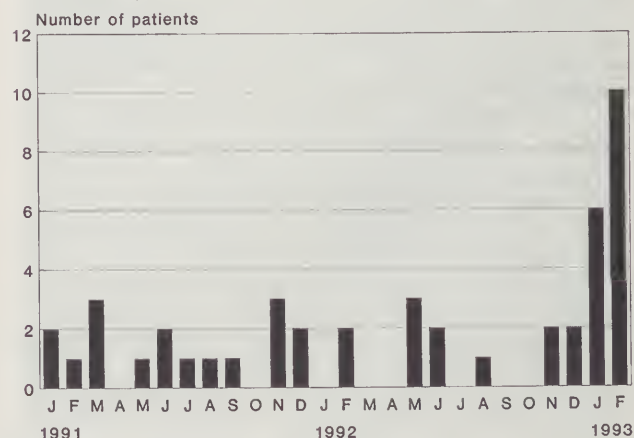
Although most cases of pneumococcal disease occur sporadically, outbreaks can occur in closed populations such as nursing homes, prisons and military barracks. During outbreaks, person-to-person transmission occurs via droplets. The incidence of pneumococcal disease is three to four times greater in patients  $\geq 40$  years of age than in persons  $< 30$  years of age. The disease occurs more commonly in males than females (3:2). Pneumo-

coccal pneumonia is the most common bacterial complication of influenza.

Pneumococcal pneumonia and influenza each account for an estimated 10–40,000 deaths per year in the United States. The majority of these deaths occur among the elderly. Pneumococcal and influenza vaccines are recommended for all persons  $\geq 65$  years of age. It is estimated that only 10–30% of persons among high-risk groups have received these vaccines as recommended.

The national objective for the year 2000 is to immunize 80% of institutionalized chronically ill or older people with the pneumococcal and influenza vaccines. The vaccines can be administered at the same time at different sites without increasing side effects. However, influenza vaccine must be given each year, usually during October or November, whereas pneumococcal vaccine is routinely administered only once. Revaccination with pneumococcal vaccine should be considered  $\geq 6$  years after the first dose for those at highest risk of either fatal pneumococcal disease (such as asplenic patients) or rapid decline in antibody levels (such as transplant recipients or those with chronic renal failure or nephrotic syndrome).

As the winter of 1993–94 approaches, physicians caring for adults  $\geq 65$  years of age are strongly encouraged to review their patients' immunization records and offer all vaccines that are indicated.



*Patients hospitalized with pneumonia from a nursing home in Kansas, January 1991 through February 1993.*

Reported by: Bureau of Disease Control, Kansas Department of Health and Environment.





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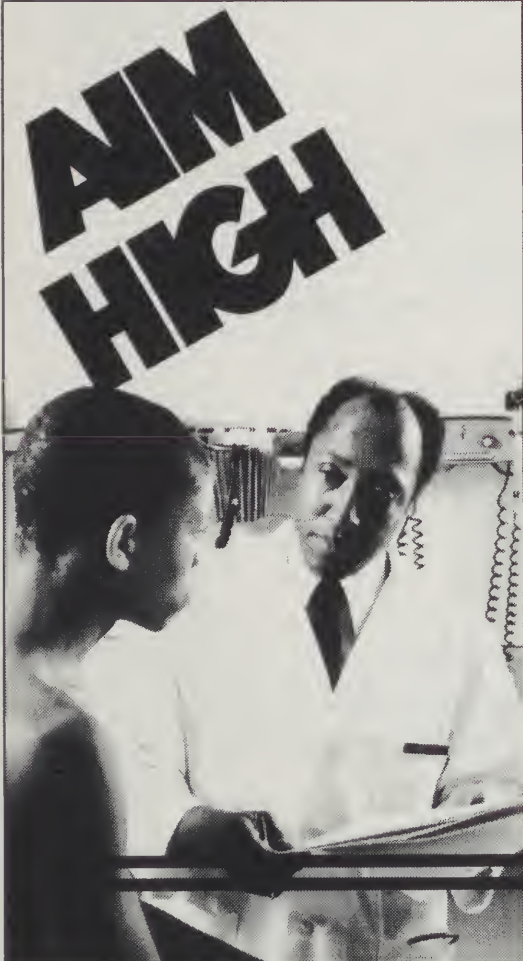
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### CONTRAINDICATIONS

Hypersensitivity to any component of this medication.

Active liver disease or unexplained, persistent elevations in liver function tests (see WARNINGS).

**Pregnancy and lactation.** Atherosclerosis is a chronic process and discontinuation of lipid-lowering drugs during pregnancy should have little impact on the outcome of long-term therapy of primary hypercholesterolemia. Cholesterol and other products of cholesterol biosynthesis are essential components for fetal development (including synthesis of steroids and cell membranes). Since HMG-CoA reductase inhibitors decrease cholesterol synthesis and possibly the synthesis of other biologically active substances derived from cholesterol, they may cause fetal harm when administered to pregnant women. Therefore, HMG-CoA reductase inhibitors are contraindicated during pregnancy and in nursing mothers. **Pravastatin should be administered to women of childbearing age only when such patients are highly unlikely to conceive and have been informed of the potential hazards.** If the patient becomes pregnant while taking this class of drug, therapy should be discontinued and the patient apprised of the potential hazard to the fetus.

### WARNINGS

**Liver Enzymes:** HMG-CoA reductase inhibitors, like some other lipid-lowering therapies, have been associated with biochemical abnormalities of liver function. Increases of serum transaminase (ALT, AST) values to more than 3 times the upper limit of normal occurring on 2 or more (not necessarily sequential) occasions have been reported in 1.3% of patients treated with pravastatin in the U.S. over an average period of 18 months. These abnormalities were not associated with cholestasis and did not appear to be related to treatment duration. In those patients in whom these abnormalities were believed to be related to pravastatin and who were discontinued from therapy, the transaminase levels usually fell slowly to pretreatment levels. These biochemical findings are usually asymptomatic although worldwide experience indicates that anorexia, weakness, and/or abdominal pain may also be present in rare patients.

As with other lipid-lowering agents, liver function tests should be performed during therapy with pravastatin. Serum aminotransferases, including ALT (SGPT), should be monitored before treatment begins, every six weeks for the first three months, every eight weeks during the remainder of the first year, and periodically thereafter (e.g., at about six-month intervals). Special attention should be given to patients who develop increased transaminase levels. Liver function tests should be repeated to confirm an elevation and subsequently monitored at more frequent intervals. If increases in AST and ALT equal or exceed three times the upper limit of normal and persist, then therapy should be discontinued. Persistence of significant aminotransferase elevations following discontinuation of therapy may warrant consideration of liver biopsy.

Active liver disease or unexplained transaminase elevations are contraindications to the use of pravastatin (see CONTRAINDICATIONS). Caution should be exercised when pravastatin is administered to patients with a history of liver disease or heavy alcohol ingestion (see CLINICAL PHARMACOLOGY: Pharmacokinetics/Metabolism). Such patients should be closely monitored, started at the lower end of the recommended dosing range, and titrated to the desired therapeutic effect.

**Skeletal Muscle:** Rhabdomyolysis with renal dysfunction secondary to myoglobinuria has been reported with pravastatin and other drugs in this class. Uncomplicated myalgia has also been reported in pravastatin-treated patients (see ADVERSE REACTIONS). Myopathy, defined as muscle aching or muscle weakness in conjunction with increases in creatine phosphokinase (CPK) values to greater than 10 times the upper limit of normal was reported to be possibly due to pravastatin in only one patient in clinical trials (<0.1%). Myopathy should be considered in any patient with diffuse myalgias, muscle tenderness or weakness, and/or marked elevation of CPK. Patients should be advised to report promptly unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever. **Pravastatin therapy should be discontinued if markedly elevated CPK levels occur or myopathy is diagnosed or suspected. Pravastatin therapy should also be temporarily withheld in any patient experiencing an acute or serious condition predisposing to the development of renal failure secondary to rhabdomyolysis, e.g., sepsis; hypotension; major surgery; trauma; severe metabolic, endocrine, or electrolyte disorders; or uncontrolled epilepsy.**

The risk of myopathy during treatment with lovastatin is increased if therapy with either cyclosporine, gemfibrozil, erythromycin, or niacin is administered concurrently. There is no experience with the use of pravastatin together with cyclosporine. Myopathy has not been observed in clinical trials involving small numbers of patients who were treated with pravastatin together with niacin. One trial of limited size involving combined therapy with pravastatin and gemfibrozil showed a trend toward more frequent CPK elevations and patient withdrawals due to musculoskeletal symptoms in the group receiving combined treatment as compared with the groups receiving placebo, gemfibrozil, or pravastatin monotherapy. Myopathy was not reported in this trial (see PRECAUTIONS: Drug Interactions). One patient developed myopathy when clofibrate was added to a previously well tolerated regimen of pravastatin; the myopathy resolved when clofibrate therapy was stopped and pravastatin treatment continued. **The use of fibrates alone may occasionally be associated with myopathy. The combined use of pravastatin and fibrates should generally be avoided.**

### PRECAUTIONS

**General:** Pravastatin may elevate creatine phosphokinase and transaminase levels (see ADVERSE REACTIONS). This should be considered in the differential diagnosis of chest pain in a patient on therapy with pravastatin.

**Homozygous Familial Hypercholesterolemia.** Pravastatin has not been evaluated in patients with rare homozygous familial hypercholesterolemia. In this group of patients, it has been reported that HMG-CoA reductase inhibitors are less effective because the patients lack functional LDL receptors.

**Renal Insufficiency:** A single 20 mg oral dose of pravastatin was administered to 24 patients with varying degrees of renal impairment (as determined by creatinine clearance). No effect was observed on the pharmacokinetics of pravastatin or its 3 $\alpha$ -hydroxy isomeric metabolite (SQ 31,906). A small increase was seen in mean AUC values and half-life (t<sub>1/2</sub>) for the inactive enzymic ring hydroxylation metabolite (SQ 31,945). Given this small sample size, the dosage administered, and the degree of individual variability, patients with renal impairment who are receiving pravastatin should be closely monitored.

**Information for Patients:** Patients should be advised to report promptly unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever.

**Drug Interactions:** Immunosuppressive Drugs, Gemfibrozil, Niacin (Nicotinic Acid), Erythromycin: See WARNINGS: Skeletal Muscle.

**Antipyrene:** Clearance by the cytochrome P450 system was unaltered by concomitant administration of pravastatin. Since pravastatin does not appear to induce hepatic drug-metabolizing enzymes, it is not expected that any significant interaction of pravastatin with other drugs (e.g., phenytoin, quinidine) metabolized by the cytochrome P450 system will occur.

**Cholestyramine/Colestipol:** Concomitant administration resulted in an approximately 40 to 50% decrease in the mean AUC of pravastatin. However, when pravastatin was administered 1 hour before or 4 hours after cholestyramine or 1 hour before colestipol and a standard meal, there was no clinically significant decrease in bioavailability or therapeutic effect. (See DOSAGE AND ADMINISTRATION: Concomitant Therapy.)

**Warfarin:** In a study involving 10 healthy male subjects given pravastatin and warfarin concomitantly for 6 days, bioavailability parameters at steady state for pravastatin (parent compound) were not altered. Pravastatin did not alter the plasma protein-binding of warfarin. Concomitant dosing did increase the AUC and C<sub>max</sub> of warfarin but did not produce any changes in its anticoagulant action (i.e., no increase was seen in mean prothrombin time after 6 days of concomitant therapy). However, bleeding and extreme prolongation of prothrombin time has been reported with another drug in this class. Patients receiving warfarin-type anticoagulants should have their prothrombin times closely monitored when pravastatin is initiated or the dosage of pravastatin is changed.

**Cimetidine:** The AUC<sub>0-12h</sub> for pravastatin when given with cimetidine was not significantly different from the AUC for pravastatin when given alone. A significant difference was observed between the AUC's for pravastatin when given with cimetidine compared to when administered with antacid.

**Digoxin:** In a crossover trial involving 18 healthy male subjects given pravastatin and digoxin concurrently for 9 days, the bioavailability parameters of digoxin were not affected. The AUC of pravastatin tended to increase, but the overall bioavailability of pravastatin plus its metabolites SQ 31,906 and SQ 31,945 was not altered.

**Gemfibrozil:** In a crossover study in 20 healthy male volunteers given concomitant single doses of pravastatin and gemfibrozil, there was a significant decrease in urinary excretion and protein binding of pravastatin. In addition, there was a significant increase in AUC, C<sub>max</sub>, and T<sub>max</sub> for the pravastatin metabolite SQ 31,906. Combination therapy with pravastatin and gemfibrozil is generally not recommended.

In interaction studies with aspirin, antacids [1 hour prior to PRAVACHOL (pravastatin sodium)], cimetidine, nicotinic acid, or probucol, no statistically significant differences in bioavailability were seen when PRAVACHOL was administered.

**Other Drugs:** During clinical trials, no noticeable drug interactions were reported when PRAVACHOL was added to: diuretics, antihypertensives, digitalis, converting-enzyme inhibitors, calcium channel blockers, beta-blockers, or nitroglycerin.

**Endocrine Function:** HMG-CoA reductase inhibitors interfere with cholesterol synthesis and lower circulating cholesterol levels and, as such, might theoretically blunt adrenal or gonadal steroid hormone production. Results of clinical trials with pravastatin in males and post-menopausal females were inconsistent with regard to possible effects of the drug on basal steroid hormone levels. In a study of 21 males, the mean testosterone response to human chorionic gonadotropin was significantly reduced (p<0.004) after 16 weeks of treatment with 40 mg of pravastatin. However, the percentage of patients showing a  $\geq 50\%$  rise in plasma testosterone after human chorionic gonadotropin stimulation did not change significantly after therapy in these patients. The effects of HMG-CoA reductase inhibitors on spermatogenesis and fertility have not been studied in adequate numbers of patients. The effects, if any, of pravastatin on the pituitary-gonadal axis in pre-menopausal females are unknown. Patients treated with pravastatin who display clinical evidence of endocrine dysfunction should be evaluated appropriately. Caution should also be exercised if an HMG-CoA reductase inhibitor or other agent used to lower cholesterol levels is administered to patients also receiving other drugs (e.g., ketoconazole, spiroclonolone, cimetidine) that may diminish the levels or activity of steroid hormones.

**CNS Toxicity:** CNS vascular lesions, characterized by perivascular hemorrhage and edema and mononuclear cell

infiltration of perivascular spaces, were seen in dogs treated with pravastatin at a dose of 25 mg/kg/day, a dose that produced a plasma drug level about 50 times higher than the mean drug level in humans taking 40 mg/day. Similar CNS vascular lesions have been observed with several other drugs in this class.

A chemically similar drug in this class produced optic nerve degeneration (Wallerian degeneration of retinogeniculate fibers) in clinically normal dogs in a dose-dependent fashion starting at 60 mg/kg/day, a dose that produced mean plasma drug levels about 30 times higher than the mean drug level in humans taking the highest recommended dose (as measured by total enzyme inhibitory activity). This same drug also produced vestibulocochlear Wallerian-like degeneration and retinal ganglion cell chromatolysis in dogs treated for 14 weeks at 180 mg/kg/day, a dose which resulted in a mean plasma drug level similar to that seen with the 60 mg/kg dose.

**Carcinogenesis, Mutagenesis, Impairment of Fertility:** In a 2-year study in rats fed pravastatin at doses of 10, 30, or 100 mg/kg body weight, there was an increased incidence of hepatocellular carcinomas in males at the highest dose (p<0.01). Although rats were given up to 125 times the human dose (HD) on a mg/kg body weight basis, their serum drug levels were only 6 to 10 times higher than those measured in humans given 40 mg pravastatin as measured by AUC.

The oral administration of 10, 30, or 100 mg/kg (producing plasma drug levels approximately 0.5 to 5.0 times human drug levels at 40 mg) of pravastatin to mice for 22 months resulted in a statistically significant increase in the incidence of malignant lymphomas in treated females when all treatment groups were pooled and compared to controls (p<0.05). The incidence was not dose-related and male mice were not affected.

A chemically similar drug in this class was administered to mice for 72 weeks at 25, 100, and 400 mg/kg body weight, which resulted in mean serum drug levels approximately 3, 15, and 33 times higher than the mean human serum drug concentration (as total inhibitory activity) after a 40 mg oral dose. Liver carcinomas were significantly increased in high-dose females and mid- and high-dose males, with a maximum incidence of 90 percent in males. The incidence of adenomas of the liver was significantly increased in mid- and high-dose females. Drug treatment also significantly increased the incidence of lung adenomas in mid- and high-dose males and females. Adenomas of the eye Harderian gland (a gland of the eye of rodents) were significantly higher in high-dose mice than in controls.

No evidence of mutagenicity was observed *in vitro*, with or without rat-liver metabolic activation, in the following studies: microbial mutagen tests, using mutant strains of *Salmonella typhimurium* or *Escherichia coli*; a forward mutation assay in L5178Y TK +/– mouse lymphoma cells; a chromosomal aberration test in hamster cells; and a gene conversion assay using *Saccharomyces cerevisiae*. In addition, there was no evidence of mutagenicity in either a dominant lethal test in mice or a micronucleus test in mice.

In a study in rats, with daily doses up to 500 mg/kg, pravastatin did not produce any adverse effects on fertility or general reproductive performance. However, in a study with another HMG-CoA reductase inhibitor, there was decreased fertility in male rats treated for 34 weeks at 25 mg/kg body weight, although this effect was not observed in a subsequent fertility study when this same dose was administered for 11 weeks (the entire cycle of spermatogenesis, including epididymal maturation). In rats treated with this same reductase inhibitor at 180 mg/kg/day, seminiferous tubule degeneration (necrosis and loss of spermatogenic epithelium) was observed. Although not seen with pravastatin, two similar drugs in this class caused drug-related testicular atrophy, decreased spermatogenesis, spermatocytic degeneration, and giant cell formation in dogs. The clinical significance of these findings is unclear.

**Pregnancy: Pregnancy Category X:** See CONTRAINDICATIONS.

Safety in pregnant women has not been established. Pravastatin was not teratogenic in rats at doses up to 1000 mg/kg daily or in rabbits at doses of up to 50 mg/kg/day. These doses resulted in 20x (rabbit) or 240x (rat) the human exposure based on surface area (mg/meter<sup>2</sup>). However, in studies with another HMG-CoA reductase inhibitor, skeletal malformations were observed in rats and mice. PRAVACHOL (pravastatin sodium) should be administered to women of child-bearing potential only when such patients are highly unlikely to conceive and have been informed of the potential hazards. If the woman becomes pregnant while taking PRAVACHOL, it should be discontinued and the patient advised again as to the potential hazards to the fetus.

**Nursing Mothers:** A small amount of pravastatin is excreted in human breast milk. Because of the potential for serious adverse reactions in nursing infants, women taking PRAVACHOL should not nurse (see CONTRAINDICATIONS).

**Pediatric Use:** Safety and effectiveness in individuals less than 18 years old have not been established. Hence, treatment in patients less than 18 years old is not recommended at this time. (See PRECAUTIONS: General.)

### ADVERSE REACTIONS

Pravastatin is generally well tolerated; adverse reactions have usually been mild and transient. In 4-month long placebo-controlled trials, 1.7% of pravastatin-treated patients and 1.2% of placebo-treated patients were discontinued from treatment because of adverse experiences attributed to study drug therapy; this difference was not statistically significant. In long-term studies, the most common reasons for discontinuation were asymptomatic serum transaminase increases and mild, non-specific gastrointestinal complaints. During clinical trials the overall incidence of adverse events in the elderly was not different from the incidence observed in younger patients.

**Adverse Clinical Events:** All adverse clinical events (regardless of attribution) reported in more than 2% of pravastatin-treated patients in the placebo-controlled trials are identified in the table below; also shown are the percentages of patients in whom these medical events were believed to be related or possibly related to the drug:

Body System/Event	All Events %		Events Attributed to Study Drug %	
	Pravastatin (N = 900)	Placebo (N = 411)	Pravastatin (N = 900)	Placebo (N = 411)
Cardiovascular				
Cardiac Chest Pain	4.0	3.4	0.1	0.0
Dermatologic				
Rash	4.0*	1.1	1.3	0.9
Gastrointestinal				
Nausea/Vomiting	7.3	7.1	2.9	3.4
Diarrhea	6.2	5.6	2.0	1.9
Abdominal Pain	5.4	6.9	2.0	3.9
Constipation	4.0	7.1	2.4	5.1
Flatulence	3.3	3.6	2.7	3.4
Heartburn	2.9	1.9	2.0	0.7
General				
Fatigue	3.8	3.4	1.9	1.0
Chest Pain	3.7	1.9	0.3	0.2
Influenza	2.4*	0.7	0.0	0.0
Musculoskeletal				
Localized Pain	10.0	9.0	1.4	1.5
Myalgia	2.7	1.0	0.6	0.0
Nervous System				
Headache	6.2	3.9	1.7*	0.2
Dizziness	3.3	3.2	1.0	0.5
Renal/Genitourinary				
Urinary Abnormality	2.4	2.9	0.7	1.2
Respiratory				
Common Cold	7.0	6.3	0.0	0.0
Rhinitis	4.0	4.1	0.1	0.0
Cough	2.6	1.7	0.1	0.0

\*Statistically significantly different from placebo.

The following effects have been reported with drugs in this class:

**Skeletal:** myopathy, rhabdomyolysis.

**Neurological:** dysfunction of certain cranial nerves (including alteration of taste, impairment of extra-ocular movement, facial paresis), tremor, vertigo, memory loss, paresthesia, peripheral neuropathy, peripheral nerve palsy.

**Hypersensitivity Reactions:** An apparent hypersensitivity syndrome has been reported rarely which has included one or more of the following features: anaphylaxis, angioedema, lupus erythematosus-like syndrome, polymyalgia rheumatica, vasculitis, purpura, thrombocytopenia, leukopenia, hemolytic anemia, positive ANA, ESR increase, arthritis, arthralgia, urticaria, asthenia, photosensitivity, fever, chills, flushing, malaise, dyspnea, toxic epidermal necrolysis, erythema multiforme, including Stevens-Johnson syndrome.

**Gastrointestinal:** pancreatitis, hepatitis, including chronic active hepatitis, cholestatic jaundice, fatty change in liver, and, rarely, cirrhosis, fulminant hepatic necrosis, and hepatoma; anorexia, vomiting.

**Reproductive:** gynecostasia, loss of libido, erectile dysfunction.

**Eye:** progression of cataracts (lens opacities), ophthalmoplegia.

**Laboratory Test Abnormalities:** Increases in serum transaminase (ALT, AST) values and CPK have been observed (see WARNINGS).

Transient, asymptomatic eosinophilia has been reported. Eosinophil counts usually returned to normal despite continued therapy. Anemia, thrombocytopenia, and leukopenia have been reported with other HMG-CoA reductase inhibitors.

**Concomitant Therapy:** Pravastatin has been administered concurrently with cholestyramine, colestipol, nicotinic acid, probucol and gemfibrozil. Preliminary data suggest that the addition of either probucol or gemfibrozil to therapy with lovastatin or pravastatin is not associated with greater reduction in LDL cholesterol than that achieved with lovastatin or pravastatin alone. No adverse reactions unique to the combination or in addition to those previously reported for each drug alone have been reported. Myopathy and rhabdomyolysis (with or without acute renal failure) have been reported when another HMG-CoA reductase inhibitor was used in combination with immunosuppressive drugs, gemfibrozil, erythromycin, or lipid-lowering doses of nicotinic acid. Concomitant therapy with HMG-CoA reductase inhibitors and these agents is generally not recommended. (See WARNINGS: Skeletal Muscle and PRECAUTIONS: Drug Interactions.)

### OVERDOSAGE

There have been no reports of overdoses with pravastatin.

Should an accidental overdose occur, treat symptomatically and institute supportive measures as required.





THE PRAVACHOL® DIRECTION  
IN LIPID MANAGEMENT

Effective lipid management  
doesn't have to be tough



- Improves key lipids — significant reduction in LDL-C<sup>1</sup>
- Excellent safety profile
- Easy for patients — once-daily dosing, well tolerated
- Usual dose: 20 mg once daily at bedtime, with or without food

  
**PRAVACHOL®**  
pravastatin sodium 20 mg tablets

PRAVACHOL is indicated as an adjunct to diet for the reduction of elevated total and LDL-cholesterol levels in patients with primary hypercholesterolemia (Types IIa and IIb) when the response to diet alone has not been adequate. Active liver disease or unexplained transaminase elevations, pregnancy and lactation are contraindications to the use of pravastatin sodium.

Please see CONTRAINDICATIONS, WARNINGS, PRECAUTIONS, and ADVERSE REACTIONS in the brief summary of prescribing information on the adjacent page.



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# KANSAS MEDICINE

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- Smoking in Kansas
- Use of Drugs for Unlabeled Indications
- HCSF Loss Experience



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# KANSAS MEDICINE

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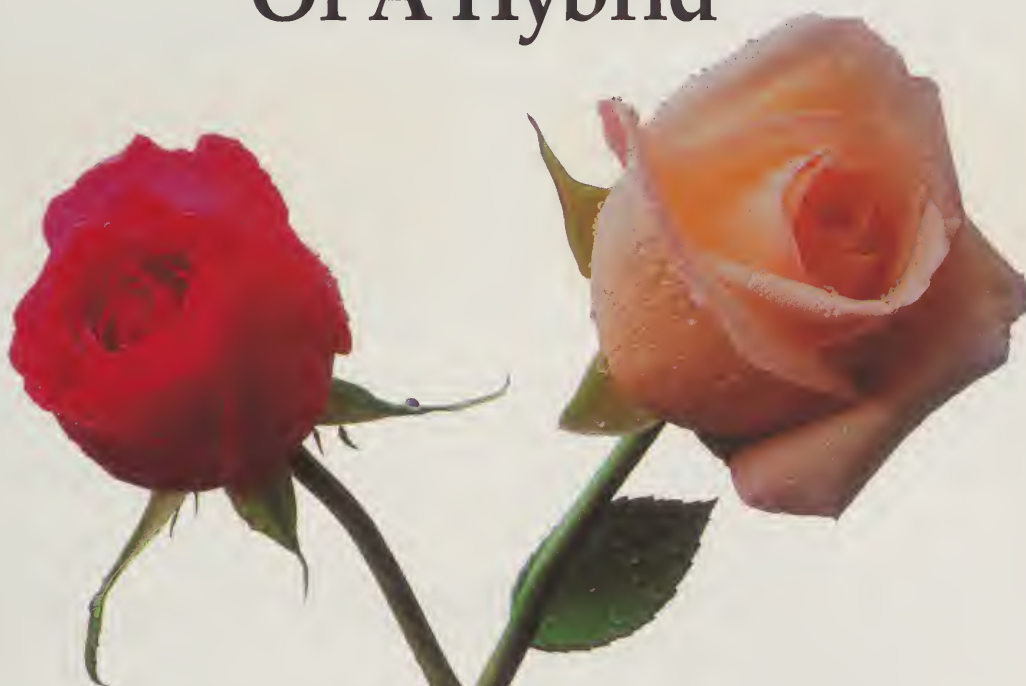
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# Discover The Elegance Of A Hybrid



At first glance, it's the *beauty* of a rose that catches the eye. The vibrant color. The delicately shaped petals. But study it more closely, and its *elegance* becomes apparent—a gentle blend of softness and strength.

At first glance, it's the *enhanced performance* of Vaseretic that catches the eye. But study Vaseretic more closely, and its *elegance* becomes apparent. The way its one-tablet, once-a-day dosage minimizes multiple

medications. Minimizes insurance copayments. And minimizes potassium supplementation.

A hybrid *blending of tolerability and power* that's available for the right patient. Vaseretic is indicated for the treatment of hypertension in patients for whom combination therapy is appropriate.

And an elegant discovery for your practice.

USE IN PREGNANCY: When used in pregnancy during the second and third trimesters, ACE inhibitors can cause injury and even death to the developing fetus. When pregnancy is detected, Vaseretic® (Enalapril Maleate-Hydrochlorothiazide) should be discontinued as soon as possible. See WARNINGS, Fetal/Neonatal Morbidity and Mortality.

**VASERETIC® 10-25**  
Enalapril Maleate-Hydrochlorothiazide

*Next*

Dosage must be individualized; the fixed combination is not for initial therapy.

Evaluation of the hypertensive patient should always include assessment of renal function.

For a Brief Summary of Prescribing Information, see adjacent pages.



**TABLETS**  
**VASERETIC®**  
(ENALAPRIL MALEATE-HYDROCHLOROTHIAZIDE)

**USE IN PREGNANCY:** When used in pregnancy during the second and third trimesters, ACE inhibitors can cause injury and even death to the developing fetus. When pregnancy is detected, VASERETIC® (enalapril maleate-hydrochlorothiazide) should be discontinued as soon as possible. See WARNINGS, Fetal/Neonatal Morbidity and Mortality.

**CONTRAINDICATIONS:** VASERETIC is contraindicated in patients who are hypersensitive to any component of this product and in patients with a history of angioedema related to previous treatment with an angiotensin converting enzyme inhibitor. Because of the hydrochlorothiazide component, this product is contraindicated in patients with anuria or hypersensitivity to other sulfonamide-derived drugs.

**WARNINGS:** General, Enalapril Maleate, Hypotension: Excessive hypotension was rarely seen in uncomplicated hypertensive patients but is a possible consequence of enalapril use in severely salt/volume depleted persons such as those treated vigorously with diuretics or patients on dialysis.

Syncope has been reported in 1.3 percent of patients receiving VASERETIC. In patients receiving enalapril alone, the incidence of syncope is 0.5 percent. The overall incidence of syncope may be reduced by proper titration of the individual components. (See PRECAUTIONS, Drug Interactions, and ADVERSE REACTIONS.)

In patients with severe congestive heart failure, with or without associated renal insufficiency, excessive hypotension has been observed and may be associated with oliguria and/or progressive azotemia, and rarely with acute renal failure and/or death. Because of the potential fall in blood pressure in these patients, therapy should be started under very close medical supervision. Such patients should be followed closely for the first two weeks of treatment and whenever the dose of enalapril and/or diuretic is increased. Similar considerations may apply to patients with ischemic heart or cerebrovascular disease, in whom an excessive fall in blood pressure could result in a myocardial infarction or cerebrovascular accident.

If hypotension occurs, the patient should be placed in the supine position and, if necessary, receive an intravenous infusion of normal saline. A transient hypotensive response is not a contraindication to further doses, which usually can be given without difficulty once the blood pressure has increased after volume expansion.

**Angioedema:** Angioedema of the face, extremities, lips, tongue, glottis and/or larynx has been reported in patients treated with angiotensin converting enzyme inhibitors, including enalapril. In such cases VASERETIC should be promptly discontinued and appropriate therapy and monitoring should be provided until complete and sustained resolution of signs and symptoms has occurred. In instances where swelling has been confined to the face and lips the condition has generally resolved without treatment, although antihistamines have been useful in relieving symptoms. Angioedema associated with laryngeal edema may be fatal. Where there is involvement of the tongue, glottis or larynx, likely to cause airway obstruction, appropriate therapy, e.g., subcutaneous epinephrine solution 1:1000 (0.3 mL to 0.5 mL) and/or measures necessary to ensure a patent airway, should be promptly provided. (See ADVERSE REACTIONS.)

Patients with a history of angioedema unrelated to ACE inhibitor therapy may be at increased risk of angioedema while receiving an ACE inhibitor (see also CONTRAINDICATIONS).

**Neutropenia/Agranulocytosis:** Another angiotensin converting enzyme inhibitor, captopril, has been shown to cause agranulocytosis and bone marrow depression, rarely in uncomplicated patients but more frequently in patients with renal impairment especially if they also have a collagen vascular disease. Available data from clinical trials of enalapril are insufficient to show that enalapril does not cause agranulocytosis at similar rates. Marketing experience has revealed several cases of neutropenia or agranulocytosis in which a causal relationship to enalapril cannot be excluded. Periodic monitoring of white blood cell counts in patients with collagen vascular disease and renal disease should be considered.

**Hydrochlorothiazide:** Thiazides should be used with caution in severe renal disease. In patients with renal disease, thiazides may precipitate azotemia. Cumulative effects of the drug may develop in patients with impaired renal function.

Thiazides should be used with caution in patients with impaired hepatic function or progressive liver disease, since minor alterations of fluid and electrolyte balance may precipitate hepatic coma.

Sensitivity reactions may occur in patients with or without a history of allergy or bronchial asthma.

The possibility of exacerbation or activation of systemic lupus erythematosus has been reported.

Lithium generally should not be given with thiazides (see PRECAUTIONS, Drug Interactions, Enalapril Maleate and Hydrochlorothiazide).

**Pregnancy, Enalapril-Hydrochlorothiazide:** There was no teratogenicity in rats given up to 90 mg/kg/day of enalapril (50 times the maximum human dose) in combination with 10 mg/kg/day of hydrochlorothiazide (2 1/2 times the maximum human dose) or in mice given up to 30 mg/kg/day of enalapril (50 times the maximum human dose) in combination with 10 mg/kg/day of hydrochlorothiazide (2 1/2 times the maximum human dose). At these doses, fetotoxicity expressed as a decrease in average fetal weight occurred in both species. No fetotoxicity occurred at lower doses; 30/10 mg/kg/day of enalapril-hydrochlorothiazide in rats and 10/10 mg/kg/day of enalapril-hydrochlorothiazide in mice.

When used in pregnancy during the second and third trimesters, ACE inhibitors can cause injury and even death to the developing fetus. When pregnancy is detected, VASERETIC should be discontinued as soon as possible. (See Enalapril Maleate, Fetal/Neonatal Morbidity and Mortality, below.)

**Enalapril Maleate, Fetal/Neonatal Morbidity and Mortality:** ACE inhibitors can cause fetal and neonatal morbidity and death when administered to pregnant women. Several dozen cases have been reported in the world literature. When pregnancy is detected, ACE inhibitors should be discontinued as soon as possible.

The use of ACE inhibitors during the second and third trimesters of pregnancy has been associated with fetal and neonatal injury, including hypotension, neonatal skull hypoplasia, anuria, reversible or irreversible renal failure, and death. Oligohydramnios has also been reported, presumably resulting from decreased fetal renal function; oligohydramnios in this setting has been associated with fetal limb contractures, craniofacial deformation, and hypoplastic lung development. Prematurity, intrauterine growth retardation, and patent ductus arteriosus have also been reported, although it is not clear whether these occurrences were due to the ACE-inhibitor exposure.

These adverse effects do not appear to have resulted from intrauterine ACE-inhibitor exposure that has been limited to the first trimester. Mothers whose embryos and fetuses are exposed to ACE inhibitors only during the first trimester should be so informed. Nonetheless, when patients become pregnant, physicians should make every effort to discontinue the use of VASERETIC as soon as possible.

Rarely (probably less often than once in every thousand pregnancies), no

10  
mg

25  
mg

alternative to ACE inhibitors will be found. In these rare cases, the mothers should be apprised of the potential hazards to their fetuses, and serial ultrasound examinations should be performed to assess the intraamniotic environment.

If oligohydramnios is observed, VASERETIC should be discontinued unless it is considered lifesaving for the mother. Contraction stress testing (CST), a non-stress test (NST), or biophysical profiling (BPP) may be appropriate, depending upon the week of pregnancy. Patients and physicians should be aware, however, that oligohydramnios may not appear until after the fetus has sustained irreversible injury.

Infants with histories of *in utero* exposure to ACE inhibitors should be closely observed for hypotension, oliguria, and hyperkalemia. If oliguria occurs, attention should be directed toward support of blood pressure and renal perfusion. Exchange transfusion or dialysis may be required as means of reversing hypotension and/or substituting for disordered renal function. Enalapril, which crosses the placenta, has been removed from neonatal circulation by peritoneal dialysis with some clinical benefit, and theoretically may be removed by exchange transfusion, although there is no experience with the latter procedure.

No teratogenic effects of enalapril were seen in studies of pregnant rats, and rabbits. On a mg/kg basis, the doses used were up to 333 times (in rats), and 50 times (in rabbits) the maximum recommended human dose. Hydrochlorothiazide, Teratogenic Effects: Reproduction studies in the rabbit, the mouse and the rat at doses up to 100 mg/kg/day (50 times the human dose) showed no evidence of external abnormalities of the fetus due to hydrochlorothiazide. Hydrochlorothiazide given in a two-liter study in rats at doses of 4-5 mg/kg/day (approximately 1-2 times the usual daily human dose) did not impair fertility or produce birth abnormalities in the offspring. Thiazides cross the placental barrier and appear in cord blood.

**Neonatal Effects:** These may include fetal or neonatal jaundice, thrombocytopenia, and possibly other adverse reactions which have occurred in the adult.

**PRECAUTIONS:** General, Enalapril Maleate, Impaired Renal Function: As a consequence of inhibiting the renin-angiotensin-aldosterone system, changes in renal function may be anticipated in susceptible individuals. In patients with severe congestive heart failure whose renal function may depend on the activity of the renin-angiotensin-aldosterone system, treatment with angiotensin converting enzyme inhibitors, including enalapril, may be associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death.

In clinical studies in hypertensive patients with unilateral or bilateral renal artery stenosis, increases in blood urea nitrogen and serum creatinine were observed in 20 percent of patients. These increases were almost always reversible upon discontinuation of enalapril and/or diuretic therapy. In such patients renal function should be monitored during the first few weeks of therapy.

Some patients with hypertension or heart failure with no apparent pre-existing renal vascular disease have developed increases in blood urea and serum creatinine, usually minor and transient, especially when enalapril has been given concomitantly with a diuretic. This is more likely to occur in patients with pre-existing renal impairment. Dose reduction of enalapril and/or discontinuation of the diuretic may be required.

**Evaluation of the hypertensive patient should always include assessment of renal function.**

**Hemodialysis Patients:** Anaphylactoid reactions have been reported in patients dialyzed with high-flux membranes (e.g., AN 69) and treated concomitantly with an ACE inhibitor. In these patients consideration should be given to using a different type of dialysis membrane or a different class of antihypertensive agent.

**Hyperkalemia:** Elevated serum potassium (greater than 5.7 mEq/L) was observed in approximately one percent of hypertensive patients in clinical trials treated with enalapril alone. In most cases these were isolated values which resolved despite continued therapy, although hyperkalemia was a cause of discontinuation of therapy in 0.28 percent of hypertensive patients. Hyperkalemia was less frequent (approximately 0.1 percent) in patients treated with enalapril plus hydrochlorothiazide. Risk factors for the development of hyperkalemia include renal insufficiency, diabetes mellitus, and the concomitant use of potassium-sparing diuretics, potassium supplements and/or potassium-containing salt substitutes, which should be used cautiously, if at all, with enalapril. (See Drug Interactions.)

**Cough:** Cough has been reported with the use of ACE inhibitors. Characteristically, the cough is nonproductive, persistent and resolves after discontinuation of therapy. ACE inhibitor-induced cough should be considered as part of the differential diagnosis of cough.

**Surgery/Anesthesia:** In patients undergoing major surgery or during anesthesia with agents that produce hypotension, enalapril may block angiotensin II formation secondary to compensatory renin release. If hypotension occurs and is considered to be due to this mechanism, it can be corrected by volume expansion.

**Hydrochlorothiazide:** Periodic determination of serum electrolytes to detect possible electrolyte imbalance should be performed at appropriate intervals. All patients receiving thiazide therapy should be observed for clinical signs of fluid or electrolyte imbalance: hypotension, hypochloremic alkalosis, and hyperkalemia. Serum and urine electrolyte determinations are particularly important when the patient is vomiting excessively or receiving parenteral fluids. Warning signs or symptoms of fluid and electrolyte imbalance, irrespective of cause, include dryness of mouth, thirst, weakness, lethargy, drowsiness, restlessness, confusion, seizures, muscle pains or cramps, muscular fatigue, hypotension, oliguria, tachycardia, and gastrointestinal disturbances such as nausea and vomiting.

Hyperkalemia may develop, especially with brisk diuresis, when severe cirrhosis is present, or after prolonged therapy. Interference with adequate oral electrolyte intake will also contribute to hyperkalemia. Hyperkalemia may cause cardiac arrhythmia and may also sensitize or exaggerate the response of the heart to the toxic effects of digitalis (e.g., increased ventricular irritability). Because enalapril reduces the production of aldosterone, concomitant therapy with enalapril attenuates the diuretic-induced potassium loss (see Drug Interactions, Agents Increasing Serum Potassium).

Although any chloride deficit is generally mild and usually does not require specific treatment except under extraordinary circumstances (as in liver disease or renal disease), chloride replacement may be required in the

treatment of metabolic alkalosis.

Dilutional hyponatremia may occur in edematous patients in hot weather; appropriate therapy is water restriction, rather than administration of salt except in rare instances when the hyponatremia is life-threatening. In actual salt depletion, appropriate replacement is the therapy of choice.

Hyperuricemia may occur or frank gout may be precipitated in certain patients receiving thiazide therapy.

In diabetic patients dosage adjustments of insulin or oral hypoglycemic agents may be required. Hyperglycemia may occur with thiazide diuretics. Thus latent diabetes mellitus may become manifest during thiazide therapy.

The antihypertensive effects of the drug may be enhanced in the postmyectomy patient.

If progressive renal impairment becomes evident consider withholding or discontinuing diuretic therapy.

Thiazides have been shown to increase the urinary excretion of magnesium; this may result in hypomagnesemia.

Thiazides may decrease urinary calcium excretion. Thiazides may cause intermittent and slight elevation of serum calcium in the absence of known disorders of calcium metabolism. Marked hypercalcemia may be evidence of hidden hyperparathyroidism. Thiazides should be discontinued before carrying out tests for parathyroid function.

Increases in cholesterol and triglyceride levels may be associated with thiazide diuretic therapy.

**Information for Patients:** Angioedema, including laryngeal edema, may occur especially following the first dose of enalapril. Patients should be so advised and told to report immediately any signs or symptoms suggesting angioedema (swelling of face, extremities, eyes, lips, tongue, difficulty in swallowing or breathing) and to take no more drug until they have consulted with the prescribing physician.

**Hypotension:** Patients should be cautioned to report lightheadedness especially during the first few days of therapy. If actual syncope occurs, the patients should be told to discontinue the drug until they have consulted with the prescribing physician.

All patients should be cautioned that excessive perspiration and dehydration may lead to an excessive fall in blood pressure because of reduction in fluid volume. Other causes of volume depletion such as vomiting or diarrhea may also lead to a fall in blood pressure; patients should be advised to consult with the physician.

**Hyperkalemia:** Patients should be told not to use salt substitutes containing potassium without consulting their physician.

**Neutropenia:** Patients should be told to report promptly any indication of infection (e.g., sore throat, fever) which may be a sign of neutropenia.

**Pregnancy:** Female patients of childbearing age should be told about the consequences of second- and third-trimester exposure to ACE inhibitors, and they should also be told that these consequences do not appear to have resulted from intrauterine ACE-inhibitor exposure that has been limited to the first trimester. These patients should be asked to report pregnancies to their physicians as soon as possible.

**NOTE:** As with many other drugs, certain advice to patients being treated with VASERETIC is warranted. This information is intended to aid in the safe and effective use of this medication. It is not a disclosure of all possible adverse or intended effects.

**Drug Interactions:** Enalapril Maleate, Hypotension—Patients on Diuretic Therapy: Patients on diuretics and especially those in whom diuretic therapy was recently instituted, may occasionally experience an excessive reduction of blood pressure after initiation of therapy with enalapril. The possibility of hypotensive effects with enalapril can be minimized by either discontinuing the diuretic or increasing the salt intake prior to initiation of treatment with enalapril. If it is necessary to continue the diuretic, provide medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS.)

**Agents Causing Renin Release:** The antihypertensive effect of enalapril is augmented by antihypertensive agents that cause renin release (e.g., diuretics).

**Other Cardiovascular Agents:** Enalapril has been used concomitantly with beta adrenergic-blocking agents, methyldopa, nitrates, calcium-blocking agents, hydralazine and prazosin without evidence of clinically significant adverse interactions.

**Agents Increasing Serum Potassium:** Enalapril attenuates diuretic-induced potassium loss. Potassium-sparing diuretics (e.g., spironolactone, triamterene, or amiloride), potassium supplements, or potassium-containing salt substitutes may lead to significant increases in serum potassium. Therefore, if concomitant use of these agents is indicated because of demonstrated hypokalemia they should be used with caution and with frequent monitoring of serum potassium.

**Lithium:** Lithium toxicity has been reported in patients receiving lithium concomitantly with drugs which cause elimination of sodium, including ACE inhibitors. A few cases of lithium toxicity have been reported in patients receiving concomitant enalapril and lithium and were reversible upon discontinuation of both drugs. It is recommended that serum lithium levels be monitored frequently if enalapril is administered concomitantly with lithium. Hydrochlorothiazide: When administered concurrently the following drugs may interact with thiazide diuretics.

**Alcohol, barbiturates, or narcotics:**—potentiation of orthostatic hypotension may occur.

**Antidiabetic drugs (oral agents and insulin):**—dosage adjustment of the antidiabetic drug may be required.

**Other antihypertensive drugs:**—additive effect or potentiation.

**Cholestyramine and colestipol resins:**—Cholestyramine and colestipol resins bind the hydrochlorothiazide and reduce its absorption from the gastrointestinal tract by up to 85 and 43 percent, respectively. Thiazides may be administered two to four hours before the resin when the two drugs are used concomitantly.

**Corticosteroids, ACTH:**—intensified electrolyte depletion, particularly hypokalemia.

**Pressor amines (e.g., norepinephrine):**—possible decreased response to pressor amines but not sufficient to preclude their use.

**Skeletal muscle relaxants, nondepolarizing (e.g., tubocurarine):**—possible increased responsiveness to the muscle relaxant.

**Lithium:**—should not generally be given with diuretics. Diuretic agents reduce the renal clearance of lithium and add a high risk of lithium toxicity. Refer to the package insert for lithium preparations before use of such preparations with VASERETIC.

**Non-steroidal Anti-inflammatory Drugs:**—In some patients, the administration of a non-steroidal anti-inflammatory agent can reduce the diuretic, natriuretic, and antihypertensive effects of loop, potassium-sparing and thiazide diuretics. Therefore, when VASERETIC and non-steroidal anti-inflammatory agents are used concomitantly, the patient should be observed closely to determine if the desired effect of the diuretic is obtained.

**Carcinogenesis, Mutagenesis, Impairment of Fertility:** Enalapril in combination with hydrochlorothiazide was not mutagenic in the Ames microbial mutagen test with or without metabolic activation. Enalapril-hydrochlorothiazide did not produce DNA single strand breaks in an *in vitro* alkaline elution assay in rat hepatocytes or chromosomal aberrations in an *in vivo* mouse

\* Registered trademark of Hospital Ltd.



bone marrow assay.

**Enalapril Maleate:** There was no evidence of a tumorigenic effect when enalapril was administered for 106 weeks to rats at doses up to 90 mg/kg/day (150 times\* the maximum daily human dose). Enalapril has also been administered for 94 weeks to male and female mice at doses up to 90 and 180 mg/kg/day, respectively, (150 and 300 times\* the maximum daily dose for humans) and showed no evidence of carcinogenicity.

Neither enalapril maleate nor the active diacid was mutagenic in the Ames microbial mutagen test with or without metabolic activation. Enalapril was also negative in the following genotoxicity studies: re-assay, reverse mutation assay with *E. coli*, sister chromatid exchange with cultured mammalian cells, and the micronucleus test with mice, as well as in an *in vivo* cytogenetic study using mouse bone marrow.

There were no adverse effects on reproductive performance in male and female rats treated with 10 to 90 mg/kg/day of enalapril.

**Hydrochlorothiazide:** Two-year feeding studies in mice and rats conducted under the auspices of the National Toxicology Program (NTP) uncovered no evidence of a carcinogenic potential of hydrochlorothiazide in female mice (at doses of up to approximately 600 mg/kg/day) or in male and female rats (at doses of up to approximately 100 mg/kg/day). The NTP, however, found equivocal evidence for hepatocarcinogenicity in male mice.

Hydrochlorothiazide was not genotoxic *in vitro* in the Ames mutagenicity assay of *Salmonella typhimurium* strains TA 98, TA 100, TA 1535, TA 1537, and TA 1538 and in the Chinese Hamster Ovary (CHO) test for chromosomal aberrations, or *in vivo* in assays using mouse germinal cell chromosomes, Chinese hamster bone marrow chromosomes, and the *Drosophila* sex-linked recessive lethal trait gene. Positive test results were obtained only in the *in vitro* CHO Sister Chromatid Exchange (clastogenicity) and in the Mouse Lymphoma Cell (mutagenicity) assays, using concentrations of hydrochlorothiazide from 43 to 1300 µg/mL, and in the *Aspergillus nidulans* non-disjunction assay at an unspecified concentration.

Hydrochlorothiazide had no adverse effects on the fertility of mice and rats of either sex in studies wherein these species were exposed, via their diet, to doses of up to 100 and 4 mg/kg, respectively, prior to conception and throughout gestation.

**Pregnancy:** Pregnancy Categories C (first trimester) and D (second and third trimesters). See WARNINGS, *Pregnancy, Enalapril Maleate, Fetal/Neonatal Morbidity and Mortality*.

**Nursing Mothers:** Enalapril and enalaprilat are detected in human milk in trace amounts. Thiazides do appear in human milk. Because of the potential for serious reactions in nursing infants from either drug, a decision should be made whether to discontinue nursing or to discontinue VASERETIC, taking into account the importance of the drug to the mother.

**Pediatric Use:** Safety and effectiveness in children have not been established.

**ADVERSE REACTIONS:** VASERETIC has been evaluated for safety in more than 1500 patients, including over 300 patients treated for one year or more. In clinical trials with VASERETIC no adverse experiences peculiar to this combination drug have been observed. Adverse experiences that have occurred, have been limited to those that have been previously reported with enalapril or hydrochlorothiazide.

The most frequent clinical adverse experiences in controlled trials were: dizziness (8.6 percent), headache (5.5 percent), fatigue (3.9 percent) and cough (3.5 percent). Adverse experiences occurring in greater than two percent of patients treated with VASERETIC in controlled clinical trials were: muscle cramps (2.7 percent), nausea (2.5 percent), asthenia (2.4 percent), orthostatic effects (2.3 percent), impotence (2.2 percent), and diarrhea (2.1 percent).

Clinical adverse experiences occurring in 0.5 to 2.0 percent of patients in controlled trials included: *Body As A Whole:* Syncope, chest pain, abdominal pain; *Cardiovascular:* Orthostatic hypotension, palpitation, tachycardia; *Digestive:* Vomiting, dyspepsia, constipation, flatulence, dry mouth; *Nervous/Psychiatric:* Insomnia, nervousness, paresthesia, somnolence, vertigo; *Skin:* Pruritus, rash; *Other:* Dyspnea, gout, back pain, arthralgia, diaphoresis, decreased libido, tinnitus, urinary tract infection.

**Angioedema:** Angioedema has been reported in patients receiving VASERETIC (0.6 percent). Angioedema associated with laryngeal edema may be fatal. If angioedema of the face, extremities, lips, tongue, glottis and/or larynx occurs, treatment with VASERETIC should be discontinued and appropriate therapy instituted immediately. (See WARNINGS.)

**Hypotension:** In clinical trials, adverse effects relating to hypotension occurred as follows: hypotension (0.9 percent), orthostatic hypotension (1.5 percent), other orthostatic effects (2.3 percent). In addition syncope occurred in 1.3 percent of patients. (See WARNINGS.)

**Cough:** See PRECAUTIONS, Cough.

**Clinical Laboratory Test Findings; Serum Electrolytes:** See PRECAUTIONS.

**Creatinine, Blood Urea Nitrogen:** In controlled clinical trials minor increases in blood urea nitrogen and serum creatinine, reversible upon discontinuation of therapy, were observed in about 0.6 percent of patients with essential hypertension treated with VASERETIC. More marked increases have been reported in other enalapril experience. Increases are more likely to occur in patients with renal artery stenosis. (See PRECAUTIONS.)

**Serum Uric Acid, Glucose, Magnesium, and Calcium:** See PRECAUTIONS.

**Hemoglobin and Hematocrit:** Small decreases in hemoglobin and hematocrit (mean decreases of approximately 0.3 g percent and 1.0 vol percent, respectively) occur frequently in hypertensive patients treated with VASERETIC but are rarely of clinical importance unless another cause of anemia coexists. In clinical trials, less than 0.1 percent of patients discontinued therapy due to anemia.

**Liver Function Tests:** Rarely, elevations of liver enzymes and/or serum bilirubin have occurred.

Other adverse reactions that have been reported with the individual components are listed below and, within each category, are in order of decreasing severity.

**Enalapril Maleate—**Enalapril has been evaluated for safety in more than 10,000 patients. In clinical trials adverse reactions which occurred with enalapril were also seen with VASERETIC. However, since enalapril has been marketed, the following adverse reactions have been reported: *Body As A Whole:* Anaphylactoid reactions (see PRECAUTIONS, *Hemodialysis Patients*); *Cardiovascular:* Cardiac arrest; myocardial infarction or cerebrovascular accident, possibly secondary to excessive hypotension in high risk patients (see WARNINGS, *Hypotension*); pulmonary embolism and infarction; pulmonary edema; rhythm disturbances including atrial tachycardia and bradycardia; atrial fibrillation; hypotension; angina pectoris; *Digestive:* Ileus, pancreatitis, hepatic failure, hepatitis (hepatocellular [proven on rechallenge] or cholestatic jaundice), melena, anorexia, glossitis, stomatitis, dry mouth; *Hematologic:* Rare cases of neutropenia, thrombocytopenia and bone marrow depression. Hemolytic anemia, including cases of hemolysis in patients with G-6-PD deficiency, has been reported; a causal relationship to enalapril has not been established. *Nervous System/Psychiatric:* Depression, confusion, ataxia, peripheral neuropathy (e.g., paresthesia, dysesthesia); *Urogenital:* Renal failure, oliguria, renal dysfunction (see PRECAUTIONS), flank pain, gynecomastia; *Respiratory:* Pulmonary infiltrates, bronchospasm, pneumonia, bronchitis, rhinorrhea, sore throat and hoarseness, asthma, upper respiratory infection; *Skin:* Exfoliative dermatitis, toxic epidermal necrolysis, Stevens-Johnson syndrome, herpes zoster, erythema multiforme, urticaria, pemphigus, alopecia, flushing, photosensitivity; *Special Senses:* Blurred vision, taste alteration, anosmia, conjunctivitis, dry eyes, tearing.

**Miscellaneous:** A symptom complex has been reported which may include a positive ANA, an elevated erythrocyte sedimentation rate, arthralgia/arthritis, myalgia/myositis, fever, serositis, vasculitis, leukocytosis, eosinophilia, photosensitivity, rash and other dermatologic manifestations.

**Fetal/Neonatal Morbidity and Mortality:** See WARNINGS, *Pregnancy, Enalapril Maleate, Fetal/Neonatal Morbidity and Mortality*.

**Hydrochlorothiazide—Body as a Whole:** Weakness; *Digestive:* Pancreatitis, jaundice (intrahepatic cholestatic jaundice), sialadenitis, cramping, gastric irritation, anorexia; *Hematologic:* Aplastic anemia, agranulocytosis, leukopenia, hemolytic anemia, thrombocytopenia; *Hypersensitivity:* Purpura, photosensitivity, urticaria, necrotizing angitis (vasculitis and cutaneous vasculitis), fever, respiratory distress including pneumonitis and pulmonary edema, anaphylactic reactions; *Musculoskeletal:* Muscle spasm; *Nervous System/Psychiatric:* Restlessness; *Renal:* Renal failure, renal dysfunction, interstitial nephritis (see WARNINGS); *Skin:* Erythema multiforme including Stevens-Johnson syndrome, exfoliative dermatitis including toxic epidermal necrolysis, alopecia; *Special Senses:* Transient blurred vision, xanthopsia.

\* Based on patient weight of 50 kg.

For more detailed information, consult your DuPont Pharma Representative or see Prescribing Information.

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## ABOUT OUR LOGO

In January 1935, a new logo appeared on the cover of KANSAS MEDICINE for the first time. This device represents two stethoscopes: the original monaural type as used by Laënnec, and the modern binaural variety. The logo was designed expressly for KANSAS MEDICINE by renowned graphic designer Bradbury Thompson, a native of Topeka and friend of two former editors of the journal, Dr. W.M. Mills and Dr. Lucien Pyle. As another former editor, Dr. Orville R. Clark, wrote in January 1955, the logo "has become as much a part of the journal as any of the features on the inside and is something which is ours alone."

# Up in Smoke

**T**hursday, November 18, was the American Cancer Society's "Great American Smokeout," an attempt by the society to get active smokers to give up their cigarettes, cigars and pipes for 24 hours in hopes that they will then quit smoking for good. The society is to be congratulated for this annual effort in volunteerism.



The hazards of smoking have long been confirmed by much scientific data, and the public has been made aware of the dangers through public pronouncements, warning labels on tobacco products and legislation prohibiting smoking in certain areas. The airlines first abolished smoking on shorter flights and then expanded the policy to encompass all flights. Restaurants have smoking and non-smoking sections. Hospitals have recently banned smoking for patients — even when a physician's order might permit it. The AMA has long been on record as working toward a smoke-free society by the year 2000.

The adverse effects of smoking on the human body are well known. Hypertension, coronary artery disease with angina pectoris and coronary occlusion, cancer of the lung, emphysema, stroke, intermittent claudication, and cancer of the gums from snuff and chewing tobacco are some of the dangers. The effects from second-hand smoke upon people exposed to smoke from others' cigarettes have also been well documented.

The tobacco industry, of course, has refused to acknowledge any of these dangers. Their reaction was summed up in a cartoon I saw years ago. The scene was a smoke-filled conference room with "Ajax Tobacco Company" on the door. The chairman was saying, "Gentlemen, all they have proved by their research is that mice shouldn't smoke."

Recent state legislation banning smoking in various sites, and the possibility of federal legislation to follow, raises the question of whether, and to what extent, government should intrude into the life of the individual. Our country was founded on the principle of individual freedom

within the scope of powers given to government for the mutual good. We have seen these freedoms eroded by local, state and federal government in the name of protecting the health and/or welfare of the citizenry. How far should we go?

One might look at the Eighteenth Amendment to the Constitution as an example of a good idea that failed. Passed in 1917, Prohibition banned the production, transportation or sale of intoxicating beverages. (Sacramental wines were excluded.) But despite subsequent laws to enforce the amendment, it was ineffective. Home brew, bathtub gin and illegal traffic in alcoholic beverages continued and resulted in the rise of organized crime. Sometimes home brewing was dangerous; my sister bears a scar an inch above her left eye as a result of a beer bottle explosion from Dad's home-made brew.

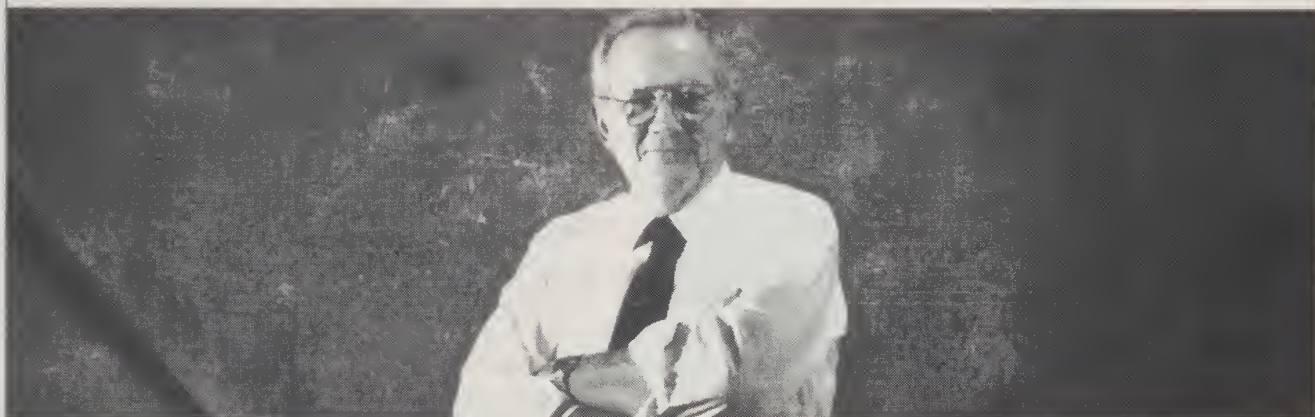
Prohibition was repealed in 1935 by the Twenty-First Amendment. Even when the reasons for legislation are sound, sometimes it just isn't effective. Prohibition of alcohol or drugs, gun control, or other areas of possible intervention probably will not solve the problems they seek to remedy.

W. L. Schenck, a past President of the Kansas Medical Society, in his presidential address of 1878 spoke of the need to establish a State Board of Health. He added, "But you ask, Will proper sanitary laws free the State from disease — and doctors? Unfortunately, no. Fools will marry and transmit their hereditary diseases, personal violations of the laws of health will continue, accidents will happen, babies will be born, and the profession will be kept alive." Despite the good intentions of government, man is still the captain of his (or her) fate and, as we all know, forbidden fruit is the sweetest.

Education is still the most effective method of helping individual smokers to make the right decisions for themselves. Legalism merely brings out the rebellious nature in all of us. In this issue, KANSAS MEDICINE presents two informational articles dealing with smoking. One reports smoking-attributable mortality in Kansas, and the other presents a program that can help our patients stop the "filthy habit." W.E.M.



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# Update on the Statewide Physician Network

**A**s I travel throughout our great state, visiting the many council districts, I am repeatedly asked about the Future Task Force, the Kansas Medical Society's response to the health care reform effort, and its work on the statewide physician network. From Garden City to Leavenworth, from Independence to Manhattan, physicians of varied specialties and backgrounds have a similar interest in developing a network that can respond to the fundamental changes resulting from health care reform.



At the KMS House of Delegates in May 1993, the delegates passed a resolution establishing a task force to study these issues. Twenty physicians from across our state now comprise that task force, and most specialties and several geographic areas are represented. The task force unanimously recommended to the KMS Council that we proceed with the investigation and development of a statewide physician network. The Council approved the plan, and a subcommittee is in the process of choosing a consultant who will help us further its development. Whether the network will be an HMO, an IPA (independent practice association) or a PPO is not yet known.

Many questions must be answered and problems solved before we can proceed. First, the cost of the endeavor must be considered. Then there are the potential constraints of the antitrust laws, which are now being studied. And there are ques-

tions about how best to market the network concept, first to physicians, then to potential employers and others.

Many hospitals and their medical staffs are organizing, and in some areas, such as Kansas City, hospitals are forming groups that may become negotiating entities, or perhaps even insurance companies. The Kansas Academy of Family Physicians is considering forming a similar network for its members across the state.

I feel strongly that the Kansas Medical Society's network, though it would not necessarily be an exclusive one, makes the most sense, since it would allow physicians from all specialties and all parts of the state to form a centralized entity, work out the differences caused by geographic location and specialty and set up a health care delivery system that we will control, rather than being controlled by others.

Our timetable calls for selection of the consultant by December 1. Immediately thereafter, our Education Subcommittee will plan informational programs for all Kansas physicians. We request your support and suggestions, and we look forward to working with you, in this exciting time of health care reform, to achieve this important goal.

A stylized, handwritten signature in dark ink, likely belonging to the President of the Kansas Medical Society.



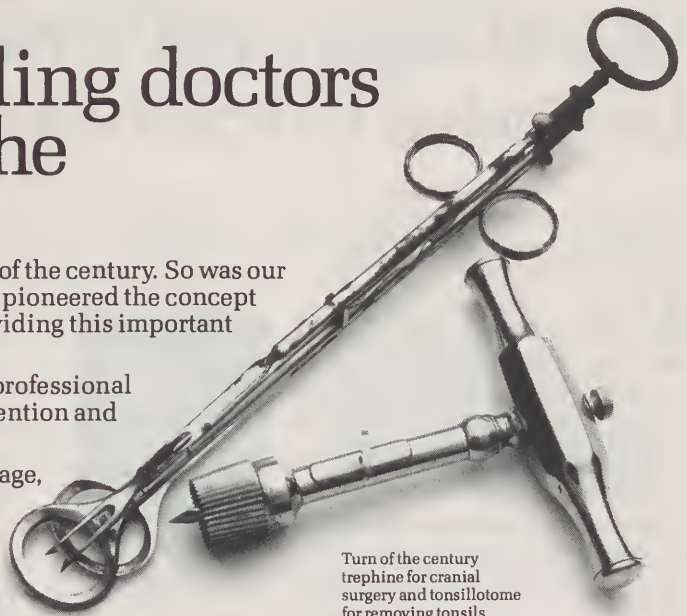
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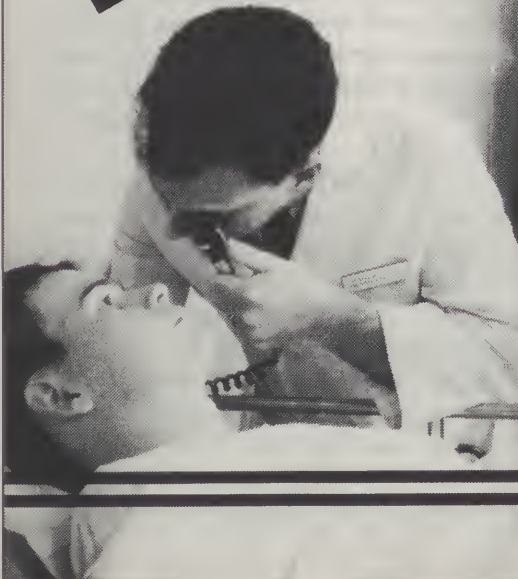
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# Use of Approved Drugs for Unlabeled Indications

WAYNE T. STRATTON, J.D.,\* *Topeka*

In two previous articles, we have discussed the liability of drug manufacturers and physicians in situations involving the prescription and dispensing of drugs. We pointed out that Kansas law may hold a physician responsible for injuries occurring as a result of the failure to give sufficient information for a patient's informed consent to treatment.



It has been suggested that a physician is liable for prescribing FDA-approved drugs for unapproved purposes. In actuality, FDA-approved indications are not intended to limit or interfere with the practice of medicine, nor to preclude physicians from using their best judgment in the interest of the patient. Instead, the FDA new drug approval process is intended to ensure that drugs meet certain statutory standards for safety, effectiveness, manufacturing, controls and labeling, and to ensure that manufacturers market their drugs only for those indications for which the drug sponsor has demonstrated "substantial evidence" of effectiveness.

In a case involving a physician who was dispensing a drug and who was sued by the government to be enjoined from mislabeling, the court pointed out that the FDA was only seeking to regulate the doctor's promotion and advertising of a prescribed drug for unapproved uses. The FDA did not seek to challenge the doctor's prescription of the drug for the unapproved use.

\*KMS Legal Counsel.

Comments appearing herein are not intended as a substitute for legal analysis or advice. Answers to legal questions depend largely upon the particular facts of a case. The reader is urged to consult an attorney for answers to specific legal questions.

These comments do not necessarily represent the views of KANSAS MEDICINE, or the Kansas Medical Society. For further information, contact Mr. Stratton, 515 S. Kansas, Topeka, KS 66603.

## What is my liability?

A more recent case, and one closer to home, from the Eighth Circuit of the U.S. Court of Appeals, examined the prescription of a drug which acts on the HIV virus. In this Missouri case, the physician prescribed the drug for patients who did not meet the criteria described in the FDA-approved labeling of the drug.

The court cited the FDA Drug Bulletin in which the agency declared its policy toward the act:

The Act does not . . . limit the manner in which a physician may use an approved drug. Once a product has been approved for marketing, a physician may prescribe it for uses or in treatment regimens or patient populations that are not included in approved labeling. Such "unapproved" or, more precisely, "unlabelled" uses may be appropriate and rational in certain circumstances, and may, in fact, reflect approaches to drug therapy that have been extensively reported in medical literature.

All experts seem to agree that it was a common practice for doctors to prescribe this particular drug for patients not meeting the criteria of the FDA-approved label. Thus, the court concluded, the fact that the FDA has not approved labeling of a drug for a particular use does not necessarily bear on those uses of the drug that are established within the medical and scientific community as medically appropriate.

As noted in the previous articles discussing physician liability when prescribing drugs, physicians must keep in mind that they occupy the position of an informed intermediary between the drug manufacturer and the patient. They must convey information regarding the risks of certain drugs to their patients. When prescribing drugs for a use not appearing on the FDA label, physicians must also take into consideration uses that have been established within the medical and scientific community as being medically appropriate.



# Is the HCSF Loss Experience Improving?

RON TODD, *Kansas Commissioner of Insurance*

**T**he Kansas Insurance Department has reduced the Health Care Stabilization Fund's surcharge rates for the most recent four fiscal years. These reductions have resulted in lower professional liability insurance costs for Kansas physicians, and I am often asked if the lower Fund surcharge rates are the result of an improved medical malpractice loss experience in Kansas. It would please all of us if I could confirm, with supporting statistics, that this was the reason for the lower surcharge rates.

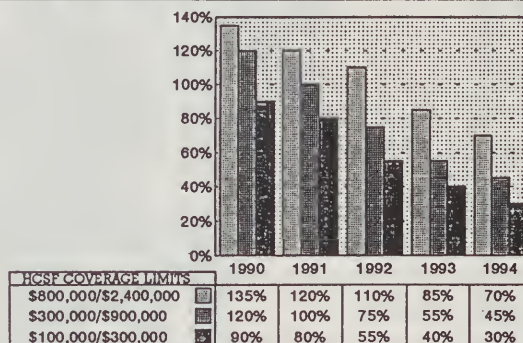
But the main reason for the rate reductions in fiscal years 1991 and 1992 was the reduced Fund coverage limits, which became effective on July 1, 1989. Because these 1989 legislative changes apply only to those claims or suits that resulted from professional services rendered on or after July 1, 1989, there was a delay in realizing the benefits from the lower Fund coverage limits.

More recent Fund surcharge reductions, for fiscal years 1993 and 1994, have resulted from updated actuarial estimates of the Fund's outstanding loss exposures. That is, the Fund actuaries' reexamination of the Fund's loss estimates previously made for the late 1980s and fiscal year 1990 indicated that the current loss expectations are now lower than the original estimates. The Insurance Department was able to offset a portion of the FY 1993 and 1994 surcharge rate indications through amortization of the estimated positive balance of the Fund. This means that the surcharge rates for these years were lowered not because of reduced Fund loss expectations for these years, but because the estimated positive balance could be used to reduce current surcharge rates.

Simply put, the FY 1994 Fund loss estimates are \$30 million. The \$30 million estimate for the current fiscal year is about the same loss estimate that exists for fiscal years 1991, 1992 and 1993. If the Fund's current estimated balance matched the Fund's projected loss exposures, then the current-year surcharge rates would have been about 50%, 75% and 120% for each of the Fund's respective coverage limits.

I hope the surcharge rates for future years can be maintained at levels all health care providers consider to be reasonable. Kansas physicians who

Health Care Stabilization Fund Surcharge Rates



have questions regarding this year's surcharge rates or other insurance-related matters should feel free to contact my office, 800-432-2484 or 913-296-3071, for additional information or assistance.

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# Good Health: A Blessing and a Responsibility

**D**ear Physicians of Kansas:

At this time of year, we traditionally pause to count our blessings. If we are fortunate enough to spend the Thanksgiving holiday with family and friends, we are usually reminded of how precious those people are in our lives. We are also thankful for food, shelter and good health.



When you, as physicians, count your blessings for the good health of your family, I hope you are able to do so knowing you are insisting on preventive health measures for your female family members, as well as your patients. I am referring to the guidelines of the American Cancer Society in following the three-step early detection program for breast cancer:

- Have regular mammograms;
- See your doctor for regular breast exams;
- Practice monthly breast self-examination.

Do you encourage your mother, your wife, your daughter, your sister, your female friends to make this simple procedure a routine part of their

lives? Do you follow up to be sure they are doing this for themselves (and for you)?

I have challenged the Kansas Medical Society Alliance Board and our members across the state to make a "Breast Health Awareness Pledge." To this end, I have distributed pledge cards to the board members and would be happy to send some cards to any physicians who would like to use them in their office or practice. This simple-card is printed as shown below and can be kept as a reminder to follow the guidelines all year long.

At this time of giving thanks, be sure to thank your female friends and relatives for participating in routine breast exams and mammography. Remind them that doing so is taking care of themselves in a preventive way. Your encouragement could save their life! You will then have even more to be thankful for in the future — and so will they.

Have a happy holiday season!

Sincerely,

*Cathy Wilcox*

## BREAST HEALTH AWARENESS PLEDGE

I pledge to myself and my family to:

1. Examine my breasts every month, the same time each month.
2. Follow the American Cancer Society guidelines for breast self exam, clinical examination, and mammography.  
(Guidelines on back of card.)

Signature: \_\_\_\_\_

We care about you, please take care of yourself!  
The Kansas Medical Society Alliance

## **Recommended guidelines for early detection are:**

*If you are 20-40 years of age:*

Examine your breasts at the same time each month.  
Have a breast exam by your doctor at least every 3 years.  
Have a screening mammogram by the age of 40.

*If you are between the ages of 40-49:*

Examine your breasts at the same time each month.  
Have a breast exam by your doctor every year.  
Have a mammogram every 1-2 years.

*If you are 50 or over:*

Examine your breasts at the same time each month.  
Have a breast exam by your doctor every year.  
Have a mammogram every year.

• Source: American Cancer Society Facts and Figures 1992.  
These recommendations are intended for women who have no symptoms.



# DOCTORS NEEDED.

More than anyone else, YOU have the power to convey the importance of mammography to your patients.

While regular mammograms are important for women over 40, the risk of breast cancer increases with age, so it becomes critically important that all women over 50 have a mammogram every year.

Annual mammography is crucial for early detection and intervention—it is a woman's only true protection.

Yet too many women are not hearing this message.

So no matter what your specialty, the American Cancer Society needs you to recommend an annual mammogram for every woman over 50.

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EVERY YEAR AFTER 50



# Smoking-Attributable Mortality in Kansas, 1990

ANDREW R. PELLETIER, M.D.,\* AND ROY C. BARON, M.D., M.P.H.,+ *Topeka*

**S**moking is the most important preventable cause of death in the United States. More than one of every six deaths in the country is attributed to it.<sup>1</sup> In 1988, an estimated 434,000 Americans died as a result of smoking.<sup>2</sup>

To better characterize the public health burden of smoking in Kansas, we estimated the number of deaths caused by smoking, hereafter referred to as smoking-attributable mortality (SAM). In addition, we estimated the impact of smoking on premature death by calculating years of potential life lost (YPLL) before life expectancy. Years of potential life lost highlights the impact of premature death, since each death is weighted by life expectancy less age at death. Using smoking-attributable mortality and years of potential life lost, we show both the number of lives and number of years of life lost to smoking.

## Methods

Cigarette smoking-attributable mortality and years of potential life lost in Kansas for 1990 were calculated using computer software, SAMMEC II (smoking-attributable mortality, morbidity and economic costs), developed specifically for estimating the disease impact of smoking in a population.<sup>3</sup> Calculations were made for 22 smoking-related diseases among adults  $\geq 35$  years of age. The analysis also included smoking-related burn deaths for all ages and four perinatal conditions related to maternal smoking.<sup>4</sup> Age- and sex-specific mortality data for 1990 were obtained from the state's vital records system. Age- and sex-specific smoking prevalence rates for Kansas in 1989 were obtained from the Current Population

Survey by the U.S. Bureau of the Census (Table 1). Years of potential life lost were determined by subtracting the age at death from age- and sex-specific life expectancy data for 1985 from the National Center for Health Statistics (Table 2).<sup>5</sup> For example, a male who died at age 51 lost 24 years of potential life.

The smoking-attributable fraction (SAF), the proportion of all deaths in a disease category that were caused by smoking, was derived from age- and sex-specific relative risks of death and prevalence data for current and former smokers.<sup>1</sup> Total smoking-attributable mortality (SAM) was calculated by multiplying the number of deaths in each disease category by the age- and sex-specific smoking-attributable fraction (deaths  $\times$  SAF = SAM). For example, 80% of the 1,369 lung cancer deaths were attributed to smoking, for a total of 1,097 smoking-attributable lung cancer deaths (Table 3). Total smoking-attributable years of potential life lost was calculated by multiplying the smoking-attributable mortality by years of potential life lost for each premature death.

Smoking-attributable mortality was compared to the other leading causes of death in Kansas by grouping all smoking-related deaths into a single category and subtracting the number of disease-specific deaths attributed to smoking from each of the five leading causes of death. For example, there were 5,018 deaths due to cancer in Kansas in 1990. We estimated that 1,367 of these cancer deaths were caused by smoking and subtracted this number from the total ( $5,018 - 1,367 = 3,651$ ). The total smoking-attributable mortality ( $n = 3,935$ ) was then compared to the number of cancer deaths unrelated to smoking ( $n = 3,651$ ). A similar method was used to compare years of potential life lost from smoking to YPLL from other causes.

## Results

In 1990, 3,935 deaths in Kansas were attributable to smoking, accounting for 18% of all deaths in the state. For persons 0-34 years of age, smoking

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accounted for 2% of all deaths. For persons 35-64 years of age, smoking accounted for 27% of all deaths; 31% of male deaths and 20% of female deaths. For persons  $\geq 65$  years of age, smoking accounted for 17% of all deaths; 26% of male deaths and 9% of female deaths. Overall, males accounted for 71% of smoking deaths, and persons  $\geq 65$  years of age accounted for 74%.

Table 3 shows the various causes of death and the estimated smoking-attributable fraction and smoking-attributable mortality for each. Sixty-eight percent of the 3,935 deaths attributable to smoking were from lung cancer, ischemic heart disease, and chronic obstructive pulmonary disease.

When considered as a separate cause of death, smoking-attributable mortality was the second most common cause overall, behind heart disease (Figure 1). In men it ranked first, while in women it ranked third behind heart disease and cancer.

In 1990, 49,505 years of potential life lost in Kansas were attributable to smoking, accounting for 16% of the state total. Overall, smoking was the third leading cause of years of potential life lost. For men, smoking was the leading cause; for women it was the third leading cause behind heart disease and cancer. Forty-seven percent of smoking-attributable years of potential life lost occurred in persons  $< 65$  years of age. The mean years of potential life lost was 13 years per smoking-attributable death.

### Comments

This study demonstrates the magnitude of the public health burden caused by smoking. As the second leading cause of death in Kansas, smoking results in almost 4,000 deaths annually, 18% of all deaths in the state. In addition, as the third leading cause of premature mortality, smoking results each year in nearly 50,000 years of life lost before expectancy, 16% of the state total. Since almost one-half of smoking-attributable years of potential life lost occurs in persons  $< 65$  years of age, smoking is responsible for an annual loss of more than 20,000 years of productive life before retirement age.

Reduction in smoking-attributable morbidity and mortality is dependent on preventing smoking initiation in the young and promoting smoking cessation in older age groups. More than 80% of smokers born since 1930 started smoking before 21 years of age.<sup>6</sup> A 1990 national survey of high school students found that 36% reported tobacco use during the previous month.<sup>7</sup> Efforts

TABLE 1  
SMOKING PREVALENCE RATES BY  
AGE AND SEX, KANSAS, 1989

Age Group	Smoking Status			
	Males		Females	
	Current	Former	Current	Former
35-64	30.7%	31.0%	18.7%*	24.2%
65+	14.2%	51.8%	6.7%	17.4%

\*Childbearing females (ages 18-44 years) 24.0%.

to prevent minors' access to tobacco in Kansas have included enactment of a law prohibiting the sale or free distribution of cigarettes to persons under 18 years of age.<sup>8</sup> Tobacco use has also been banned inside all public schools. Other strategies that need to be considered are school-based education programs, raising excise taxes on tobacco products, restricting advertising that targets youth, and banning the sale of cigarettes through vending machines.<sup>7</sup>

Unlike the other leading causes of death for which there are multiple risk factors, smoking-attributable mortality could be controlled by the elimination of a single risk factor: smoking.<sup>9</sup> Smoking cessation has major and immediate health benefits, regardless of age.<sup>10</sup> Smokers who quit before 50 years of age have half the risk of dying during the next 15 years, compared to

TABLE 2  
YEARS OF POTENTIAL LIFE LOST  
AT AGE OF DEATH, BY SEX,  
UNITED STATES, 1985

Age of Death	Years of Potential Life Lost	
	Males	Females
<1	71.2	78.2
1-19	62.3	69.1
20-24	50.9	57.4
25-29	46.3	52.6
30-34	41.7	47.7
35-39	37.1	42.9
40-44	32.5	38.2
45-49	28.1	33.6
50-54	23.9	29.1
55-59	20.1	24.9
60-64	16.5	20.8
65-69	13.3	17.1
70-74	10.5	13.6
75-79	8.1	10.5
80-84	6.1	7.7

Note: Each YPLL value for males and females is an average for the specified age group.

TABLE 3  
ESTIMATED SMOKING-ATTRIBUTABLE MORTALITY (SAM), BY CAUSE — KANSAS, 1990

<i>Cause of death (ICD-9 rubric)</i>	<i>Age (years)</i>	<i>No. Deaths</i>	<i>Adjusted SAF*</i>	<i>SAM</i>
Neoplasms				
Lip, oral cavity, pharynx (140-149)	≥ 35	74	0.74	55
Esophagus (150)	≥ 35	89	0.72	64
Pancreas (157)	≥ 35	244	0.21	51
Larynx (161)	≥ 35	32	0.78	25
Trachea, bronchus, lung (162)	≥ 35	1369	0.80	1097
Cervix uteri (180)	≥ 35	39	0.23	9
Urinary bladder (188)	≥ 35	88	0.35	31
Kidney, other unspecified urinary organs (189)	≥ 35	118	0.30	35
Cardiovascular diseases				
Rheumatic heart disease (390-398)	≥ 35	59	0.14	8
Hypertensive disease (401-404)	≥ 35	227	0.11	26
Ischemic heart disease (410-414)	≥ 35	5102	0.17	888
Pulmonary circulation disease (415-417)	≥ 35	143	0.15	21
Other heart disease (420-429)	≥ 35	2185	0.14	307
Cerebrovascular disease (430-438)	≥ 35	1701	0.13	213
Atherosclerosis (440)	≥ 35	245	0.30	73
Aortic aneurysm (441)	≥ 35	189	0.42	79
Other arterial disease (442-448)	≥ 35	112	0.34	38
Respiratory diseases				
Respiratory tuberculosis (010-012)	≥ 35	6	0.17	1
Pneumonia, influenza (480-487)	≥ 35	943	0.20	189
Chronic bronchitis, emphysema (491-492)	≥ 35	179	0.77	138
Asthma (493)	≥ 35	40	0.20	8
Chronic airway obstruction (496)	≥ 35	719	0.76	544
Perinatal Conditions				
Short gestation/low birth weight (765)	< 1	27	0.15	4
Respiratory distress syndrome (769)	< 1	14	0.14	2
Sudden infant death syndrome (798.0)	< 1	53	0.11	6
Other respiratory condition of fetus and newborn (770)	< 1	27	0.15	4
Other conditions				
Burn deaths (E890-899)	all	37	0.51	19
All other causes	all	8113	0.00	0
Total	all	22174	0.18	3935

\*Smoking-Attributable Fraction

persons who continue to smoke. For coronary heart disease, the excess risk caused by smoking is reduced by about half after one year of abstinence. After 10 to 15 years of abstinence, former smokers have nearly the same overall mortality risk as persons who never smoked.<sup>10</sup>

In 1989, 48% of persons > 20 years of age in Kansas who had ever smoked had quit (1989 Current Population Survey). In a recent survey of adults in Kansas (1990 Behavioral Risk Factor Surveillance System, unpublished data), 61% of current cigarette smokers reported at least one serious attempt to stop smoking. Forty-seven percent of these attempts had occurred within the previous 12 months; 68% of the quit attempts were successful for at least one week. Although more than 90% of smokers who successfully quit

do so on their own, advice from a physician or other health-care professional is an important element in motivating smokers to make an attempt to quit.<sup>11,12</sup> Health-care workers should view every clinic visit as an opportunity to advise and assist smokers to quit. The University of Kansas Medical School has developed a smoking-cessation program explained elsewhere in this journal. The National Cancer Institute has also developed a protocol to help physicians provide advice about smoking cessation.<sup>13</sup> Copies of the NCI protocol may be obtained by calling 1-800-4CANCER.

The national objective for the year 2000 is to reduce the prevalence of cigarette smoking to no more than 15% among people ≥ 20 years of age.<sup>14</sup> Smoking prevalence in Kansas among all adults is currently 21% (1990 Kansas Behavioral Risk



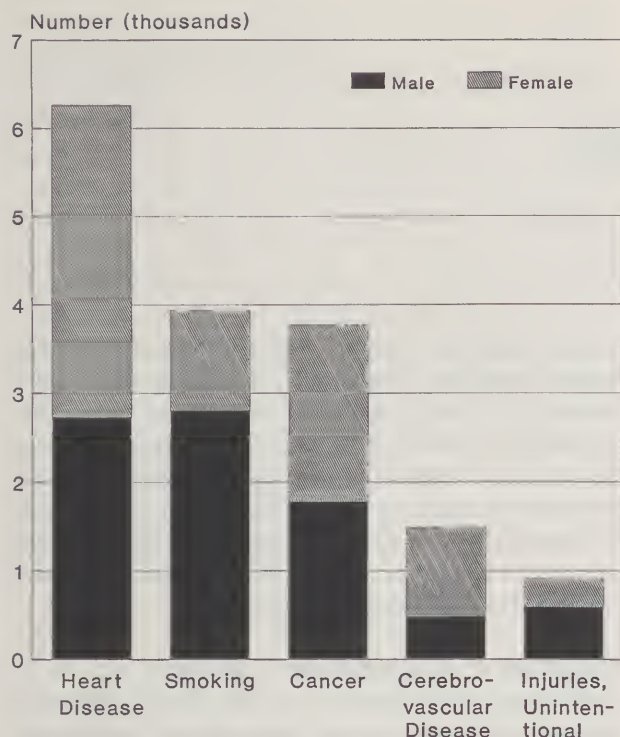


Figure 1. Leading causes of death, including smoking, by sex: Kansas, 1990.

Factor Surveillance System, unpublished data), compared to 24% in 1982 (1982 Kansas Behavioral Risk Factor Surveillance System, unpublished data). At the current rate of decline, (0.4% per year), Kansas will fall short of the year 2000 objective. Cooperative efforts, such as the Tobacco Free Kansas coalition, will be required on the part of health workers, educators, legislators, parents, the media and community organizations to reach this objective. The benefits of such cooperative efforts will be a reduction in smoking-attributable mortality in Kansas.

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## Lady Killer

Among many young women, smoking  
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It is not. Smoking is deadly.  
If you smoke, please consider stopping.  
For help, information and support,  
please contact your local  
American Cancer Society.



# The KUFP Five-Visit Quit-Smoking Program

BRUCE S. LIESE, Ph.D.,\* *Kansas City*

**C**igarette smoking is deadly. In fact, it has been estimated that 434,000 people died in 1988 due to cigarette smoking.<sup>1</sup> This figure includes those who died of cancer, lung disease, heart disease, renal disease, pancreatic disease and house fires caused by careless smoking. Approximately 49.4 million Americans (28.1%) are cigarette smokers,<sup>2</sup> despite the fact that cigarette smoking is a leading cause of morbidity and mortality in this country.

Since the mid-1970s the number of smokers has decreased steadily. Historically, more men than women have smoked; however, a higher proportion of men than women have quit smoking. It has been projected that by the year 1995, more women than men will be smokers. The number of minorities, poor and less well-educated people who smoke has been disproportionately higher than those who do not smoke, and this trend is expected to continue.

## Nicotine Dependence

Cigarette smoking is extremely addictive. In their classic review, Hunt et al.<sup>3</sup> found similar relapse rates among smokers, alcoholics and heroin addicts: approximately two-thirds of those who stopped using any of these drugs had relapsed within three months after treatment. These data suggest a powerful underlying addictive process which is common to all addictive disorders. The physician's role in smoking cessation is to motivate continued attempts to quit smoking, especially since the probability of quitting is related to the number of times a patient attempts to quit smoking.

Nicotine is the addictive ingredient in cigarettes. Nicotine dependence is included in the revised third edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-III-R),<sup>4</sup>

along with the other psychoactive substances (alcohol, opiates, cocaine, etc.). The diagnostic symptoms most commonly seen in nicotine dependence include: tolerance, unsuccessful efforts to control (or limit) smoking, continued use despite knowledge of the medical problems caused by smoking, withdrawal symptoms (e.g., anxiety, depression, tension, etc.) and continued smoking to avoid withdrawal symptoms.

## Smoking Cessation Interventions

In a report published by the National Cancer Institute, Schwartz<sup>5</sup> critically reviewed the literature on smoking cessation interventions. He divided the various methods into 10 categories: self-care, educational approaches/groups, medication, nicotine chewing gum, hypnosis, acupuncture, physician counseling, risk factor preventive trials, mass media and community programs and behavioral methods. For example, while hypnosis and acupuncture have both been of interest to the general public, empirical validation of these methods has been weak and further controlled studies are necessary prior to assuming their efficacy.<sup>5</sup>

Approximately one million Americans per year quit smoking and most do so on their own through "self-care." In fact, three-fifths of all smokers would prefer to quit on their own, rather than seek group quit-smoking programs.<sup>5</sup> There are many self-help aids for people wishing to quit smoking, including books, pamphlets, audio cassettes, drug store preparations, correspondence courses, and so forth. Approximately 16% to 20% of smokers who quit on their own are abstinent at one year.<sup>5</sup>

For those who wish to receive assistance with smoking cessation, there are non-profit and commercial clinics and groups available. Most of these utilize cognitive-behavioral methods, including education, self-monitoring, aversive procedures, stimulus control and modification of attitudes about smoking. In a review of 46 group smoking cessation programs, Schwartz found median cessation rates ranging from 21% to 36%, depending

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on the length of follow-up and the time when the study was conducted.<sup>5</sup>

A number of medications have been tried as aids to smoking cessation over the years. These have included lobeline, meprobamate, amphetamines, anticholinergics, sedatives, tranquilizers, sympathomimetics, anticonvulsants, buspirone, propranolol, clonidine, nicotine gum and, most recently, transdermal nicotine. Of these, the most promising medications have been those which replace the nicotine from cigarettes with prescription nicotine (i.e., nicotine gum and transdermal nicotine). In fact, the median cessation rates for nicotine gum at six-month and one-year follow-ups were 23% and 11%. These rates were substantially higher when gum was used in conjunction with cognitive-behavioral smoking cessation programs: 35% and 29%.<sup>5</sup>

At the present time, transdermal nicotine delivery systems are extremely popular. Initial findings show considerable promise.<sup>6</sup> The Transdermal Nicotine Study Group recently completed two six-month multicenter controlled clinical trials which evaluated the efficacy of transdermal nicotine for smoking cessation. In these trials, 935 patients were randomly assigned to one of three conditions: 21 mg, 14 mg, 7 mg or placebo. All patients enrolled in the study received counseling and written materials to assist in their smoking cessation efforts. Abstinence rates at six months were significantly greater ( $p < .001$ ) in the 21 mg patch group (26%) than in the placebo group (12%).

Most physicians believe they should try to persuade their patients to quit smoking; however, only about 50% of smokers report that a physician has advised them to cut down or quit smoking.<sup>7</sup> One reason for physicians' reluctance to address this habit is the belief that they will not be successful at helping patients to quit, but the results of numerous studies contradict this belief. Studies on the effects of minimal physician interventions (e.g., two minutes of physician advice and the provision of an educational pamphlet), suggest that such interventions have significant positive effects on abstinence at one year. In fact, median cessation rates for brief physician interventions are six percent.<sup>5</sup> (Abstinence rates in control groups tend to be less than one percent at one year.) When more time and effort are invested in smoking cessation efforts, one-year abstinence has been as high as 25%.<sup>5</sup> This paper presents a physician-delivered intervention which maximizes patient motivation to quit smoking.

## The Modified KUFP Five-Visit Program

*Background.* Several years ago, an article was published describing the KUMC five-session quit-smoking clinic.<sup>8</sup> At that time, the clinic could best be described as a group smoking-cessation program, facilitated by a psychologist and a physician. Since 1987 the program has undergone substantial modifications. First, it is now offered to patients directly by physicians (rather than by a psychologist). Second, it has been changed to a brief individual intervention, rather than a comprehensive group clinic. Third, it makes use of a new pharmacological adjunct, the transdermal nicotine patch. And fourth, the new program places more emphasis on changing patients' addictive thoughts and beliefs about smoking. In the remainder of this paper, the modified quit-smoking program is described in hopes that the practical advice herein will motivate the reader to take an active role in helping patients to quit smoking.

*Preparation for the program.* To begin with, physicians should regularly inquire about patients' smoking status. In fact, it is useful to note *all* patients' smoking status clearly and explicitly in a prominent place on the medical record. When a patient admits to being a smoker, the physician should offer a clear and direct smoking cessation message, for example: "Smoking is hazardous to your health. I advise you to quit smoking."

When a patient expresses a wish to quit, the physician should examine the patient's motivation level. Patients who are highly motivated to quit are encouraged to set a "cold turkey" quit date and make five ten-minute visits over a one-month period. The patient actually quits smoking on the day of the third visit. At other visits the patient is helped to anticipate "high-risk" situations (i.e., those which might trigger relapse) and plan relapse prevention strategies. When the patient successfully quits smoking, the physician's role is to reinforce this success with praise and encouragement.

A major component of this program is its emphasis on cognitive processes (i.e., the patient's thoughts). Beck and his colleagues<sup>9</sup> have developed a model for understanding substance abuse (including nicotine dependence) which provides the theoretical basis for this program (see figure). To summarize their model, individuals respond to stimuli with various automatic thoughts, depending on their basic beliefs, experiences and learning histories. Cigarette smokers may respond to stress, for example, with the anticipatory belief:

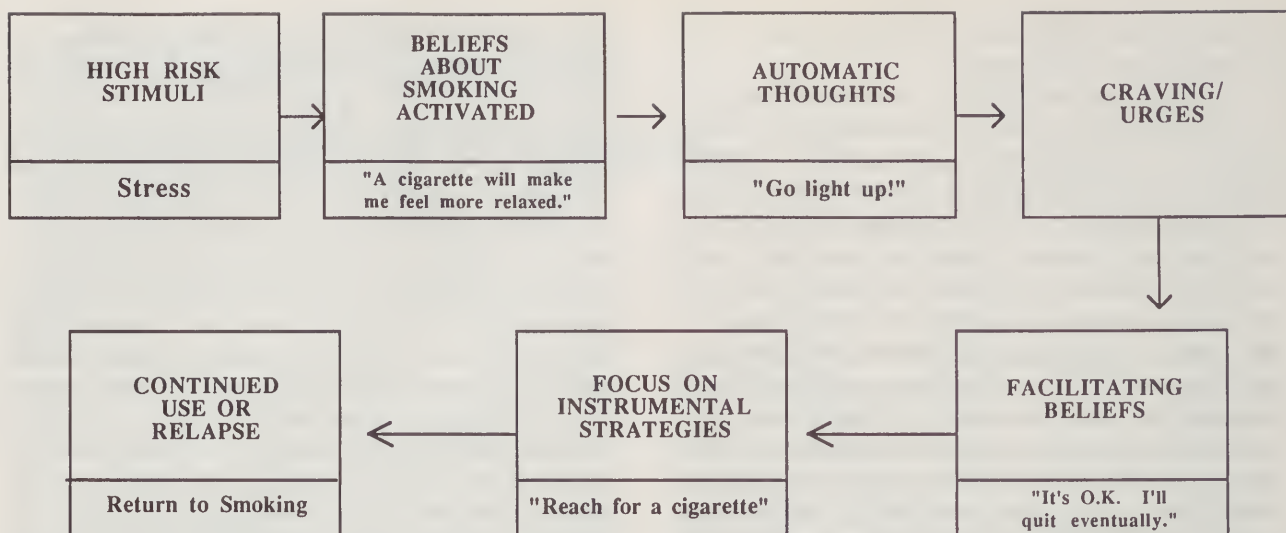


Figure 1. Cognitive model of smoking (Beck, et al.)

"a cigarette will make me feel more relaxed." From this belief, the patient has the automatic thought: "Go light up!" which leads to an urge. An urge only leads to actual smoking when the patient engages in permissive beliefs (e.g., "It's okay; I'll quit eventually"). Following such permissive beliefs, the individual will engage in some instrumental behaviors (e.g., reaching for and lighting a cigarette), which finally results in actual smoking.

An understanding of the cognitive processes associated with smoking can be quite helpful to both patient and physician, since the model provides multiple opportunities for intervention and cognitive-behavioral modification. In preparation for this program, the physician is encouraged to learn this model, which provides several points of control for the patient trying to quit smoking. Furthermore, the physician is encouraged to present a copy of the figure (above) as a visual representation of the cognitive model.

### Descriptions of Each Visit

In this section, the five visits are briefly described. Although success in office-based smoking cessation is related to the intensity and duration of the intervention, it is understood that some physicians will not be available for five smoking-cessation visits. In such cases, it is important that the physician modify the present program. For example, the physician might assign a nurse or office employee to follow up with patients who are attempting to quit smoking. Contacts might be limited to telephone calls to the patient to elicit feedback and offer advice or moral support. Re-

gardless of the form of the contact (telephone, visit, etc.), emphasis is placed on the patient's thoughts about smoking and cessation. It is important to remember that the more "quality" contact the patient has with the physician for smoking cessation, the greater the likelihood of success.

*The first visit.* People smoke for many reasons, including boredom, anxiety, job stress, relationship problems, loneliness, oral gratification, weight control, and more. When these reasons are well understood, the patient can begin to anticipate and plan for "high-risk" situations with non-smoking alternatives. For example, many patients smoke in order to control their weight. Specifically, when they feel anxious or tense, they light up rather than to reach for food. As an alternative patients might substitute exercise such as walking or jogging for stress management. During the first visit for smoking cessation, the physician discusses the advantages and disadvantages of smoking versus quitting. Such a discussion should naturally lead to methods for replacing the advantages of smoking, such as an opportunity to relax, with alternative strategies for gaining the same advantages, such as talking to a friend.

At the end of the first visit, the physician prescribes a homework assignment: the patient is asked to keep a diary of smoking urges. Specifically, he or she is asked to write down all strong urges experienced during each day, noting the *circumstances* of the urge, the *feelings* prior to and during the urge, the *thoughts* which precipitated the urge, and whether or not the patient *actually smoked* in response to the urge. This diary



serves several purposes. First, it provides valuable data regarding the patient's high-risk situations and coping strategies. Second, it serves as a test of the patient's motivation to quit smoking. And perhaps most importantly, it provides the patient and the physician with data about thoughts and beliefs which precipitate urges and cravings for a cigarette.

*The second visit.* The second visit begins with a review of the diary. If the patient has successfully completed this homework assignment, the physician and patient discuss the experience. The physician uses "open-ended" questions to elicit insights from the patient and "reflection" to focus on what the patient has said. For example, it is common for the patient to decrease smoking between the last visit and the present visit, simply by being more attentive to smoking. The physician might begin the second session by asking an open question: "How did you do on your smoking diary?" In response the patient might say, "I'm surprised. I wasn't trying to cut down. It just seemed to happen." The physician might respond with a reflection such as: "So you learned that you really can control your smoking."

Some patients fail to complete homework assignments. When this occurs, it is important to discuss the difficulties contributing to noncompliance. For example, when the patient states, "I didn't have time to do the diary," the physician might ask an open question such as, "How strong is your motivation to quit smoking?" To this the patient might reply, "I really want to quit, but the diary is a real hassle." The physician might respond with: "So you want to quit, but you saw little value to this assignment" (reflection). "What were your thoughts about doing this assignment?" (open question). By using open questions and reflective responses in such conversations, the physician becomes an active listener. As a result of the physician's active listening, the patient should become more attentive to the cognitive and behavioral processes which contribute to cigarette smoking. Increased attentiveness should result in greater understanding, which should result in increased control over habitual smoking.

During this visit, patients are also taught the role of their thoughts and beliefs in smoking, using the diagram of the cognitive model. Most smokers believe they "automatically" (i.e., involuntarily) smoke. They deny any conscious thoughts about finding and lighting the cigarette or inhaling. To be maximally effective, the physi-

cian should teach patients that each cigarette smoked is a result of complex and subtle automatic thinking processes which ultimately conclude with the decision to smoke. Using the cognitive model, the physician might explain: "When you are tired, bored, tense or angry, you might have automatic thoughts which trigger smoking, such as: 'I must have a cigarette.' 'I can't stand withdrawal.' 'I'll have a nicotine fit if I don't smoke a cigarette!'" The first step towards reducing your urge to smoke is identifying and modifying thoughts such as these, which intensify your urges." Alternatively the patient is encouraged to think: "I don't need a cigarette." "Smoking is a dirty, deadly habit which only makes my problems more complicated." "I am ultimately in control of my decisions." "I have decided not to smoke."

At the end of this visit, the patient is reminded that he or she will quit smoking on the day of the next visit, prior to the actual office visit. The patient is encouraged to discuss thoughts and concerns about quitting. The patient is also encouraged to consider using transdermal nicotine in addition to cognitive and behavioral cessation strategies.

*The third visit.* If all goes well, the patient has quit smoking during the day of the third visit. At the third visit, the patient and physician discuss the significance of this special day, now that the patient has quit smoking. During this visit, the physician reviews the patient's plan for dealing with urges. But more importantly, they discuss the patient's thoughts which might trigger or exacerbate urges, such as "I've got to have a cigarette." They also discuss alternative thoughts to replace the former thoughts, such as "I don't need to smoke cigarettes."

After this discussion, the patient is offered a prescription for transdermal nicotine. If the patient chooses to use this intervention, the physician describes methods for most effective use, such as "The patch is placed on the upper body. . . ." The patient is encouraged to contact the physician's office with any questions, concerns and so forth, regarding the process of smoking cessation.

*The fourth visit.* During this visit, the physician and patient discuss the patient's experiences since quitting smoking. They discuss high-risk situations and how the patient has dealt with them. They also discuss the patient's urges to smoke and thoughts about smoking which either increased or decreased the likelihood of smoking. If the patient has smoked, the physician is encour-

aged to take a very positive, supportive, reassuring role. Slips or lapses should be treated by both patient and physician as important learning experiences. Such experiences provide direct opportunities to identify high-risk situations, such as interpersonal conflicts, and high-risk thoughts. For example, patients who have just one cigarette might erroneously see themselves as smokers again. Such all-or-nothing thinking increases the likelihood of further relapse. Marlatt and Gordon,<sup>10</sup> in their classic text on relapse prevention, call this phenomenon the Abstinence Violation Effect (AVE). When AVE occurs, the physician's role is to assure patients that they can always return to abstinence after a slip.

*The fifth visit.* The fifth visit for smoking cessation is much like the fourth in its focus on the maintenance of change. As Mark Twain once said, "To cease smoking is the easiest thing I ever did. I ought to know because I've done it a thousand times." In fact, maintenance has been considered by many to be the most difficult stage of behavior change. In this last session, physician and patient discuss the maintenance phase of smoking cessation. In particular, they discuss potential future high-risk situations and appropriate cognitive-behavioral methods for coping with these. Finally, physician and patient discuss the gains which have taken place since the patient quit smoking.

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*Follow-up office visits.* Upon completion of this formal smoking cessation program, the patient will continue to see his or her physician for regular health maintenance and health care. Thus, the physician will be in an ideal position to serve as a relapse prevention resource to the patient. In follow-up visits, the physician should continue to reinforce the gains achieved by smoking cessation. Furthermore, the patient may always be vulnerable to smoking urges, and the physician may be instrumental in helping the patient to deal with them. By discussing the patient's thoughts and feelings about smoking and quitting, the physician can regularly help the patient to anticipate and cope with high-risk situations and possibly even occasional smoking lapses.

## Summary

This article has presented an overview of the Quit-Smoking Program developed and modified at the KUMC Department of Family Practice. Originally, this clinic was designed as a group treatment program, facilitated by a psychologist and physician. Recently, however, the program has been modified for office-based primary care physicians. Because smoking is such a deadly habit, it is hoped that physicians will take a more active role in smoking cessation efforts with their patients who are currently smokers.

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# Frontal Lobe Dementia Due to a Meningioma

MICHAEL S. HANDLER, M.D.,\* *Kansas City*

**A** 69-year-old white male sought medical attention after the car he was driving collided with a parked vehicle. On initial evaluation, the patient appeared well oriented and in no apparent distress, although he could remember none of the details of the accident. Review of systems disclosed anosmia of many years' duration and increasingly severe memory failure over the previous five years, which the family assumed was Alzheimer's dementia. A cerebral CT scan, obtained to exclude traumatic changes, revealed a large subfrontal tumor measuring approximately 6.0 x 6.0 x 4.0 cms (Figure 1).

The tumor was resected, and a cerebral biopsy was obtained to rule out senile dementia of the Alzheimer's type (SDAT). Microscopic examination of the tumor showed bipolar cells with benign nuclear features and indistinct cytoplasmic borders arranged in fascicles exhibiting whorl formation, changes consistent with a benign meningotheiomatous meningioma (Figure 2). Sections of cerebral cortex, stained with H&E, modified Bielschowsky's method,  $\beta$ -amyloid and ubiquitin immunoperoxidase preparations showed no significant neuronal loss or gliosis. There were no diffuse or neuritic plaques, neurofibrillary tangles, neocortical Lewy or Pick bodies or spongiform changes of the neuropil. The histopathologic findings supported neither the diagnosis of SDAT nor of any other dementing processes.

During a subsequent telephone interview with the patient's spouse, the nature of the patient's dementing illness was more carefully detailed. The patient's cognitive decline was typified chiefly by loss of recent memory, with intact remote memory, and by a prominent personality change characterized by extreme apathy, confusion and poor judgment. This marked abulia was first noted upon the patient's retirement four years earlier. His premorbid personality was de-

scribed as spontaneous, enthusiastic, energetic, self-motivated and task-oriented. He had no problems with language or calculations and still balanced the family's monthly bank statement. He had no difficulty dressing and still performed all the other activities of daily life. There was no family history of dementia. Following the removal of his meningioma, the patient's wife observed that the patient had regained his zest for life.

## Comments

This case illustrates the usefulness of dividing dementing disorders into cortical and subcortical processes, as each has a distinctive clinical presentation.<sup>1,2,3</sup> Cortical diseases, as exemplified by Alzheimer's and Pick's dementias, are conditions in which the predominant degeneration affects the neocortex. As the neocortex is the part of the brain where instrumental functions such as language, calculations, sensory processing and the manipulation of objects are believed to originate, the cortical dementias are characterized clinically by amnesia, acalculia, aphasia, agnosia, and apraxia.

The subcortical, or more accurately, the frontal-subcortical system, consists of the frontal lobe, thalamus, basal ganglia and a variety of small, discrete brain stem and basal forebrain nuclei, including the basal nucleus of Meynert, substantia nigra, locus ceruleus and dorsal and median raphe nuclei. It is believed that the frontal-subcortical system, in conjunction with limbic cortices, is responsible for the fundamental aspects of cognition, such as abstraction, motivation, mood, sequencing, attention, reward appreciation and various aspects of personality. In brief, the subcortex maintains the milieu within which mentation proceeds. Patients with diseases that target components of the frontal-subcortical system, such as progressive supranuclear palsy, Huntington's chorea and Parkinson's and Wilson's diseases, have an impaired ability to maintain an effective cognitive equilibrium. They may appear confused due to bradyphrenia and deficits in executive functions such as attention span, set se-

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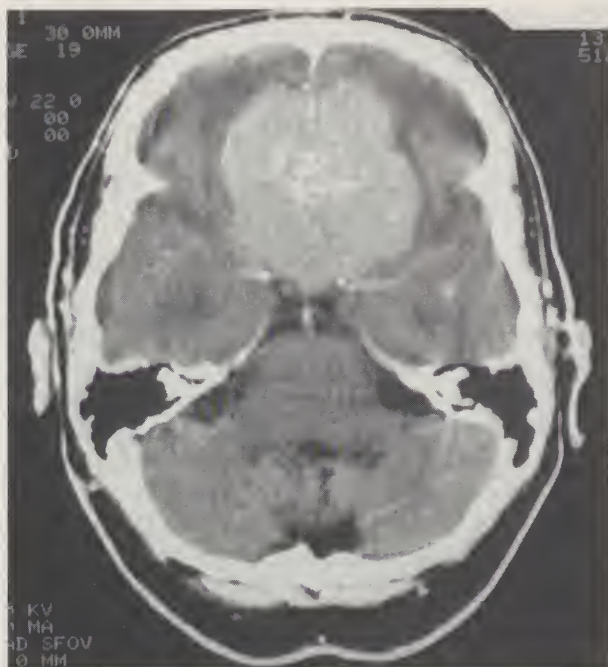


Figure 1. Cerebral CT scan showing large subfrontal meningioma.

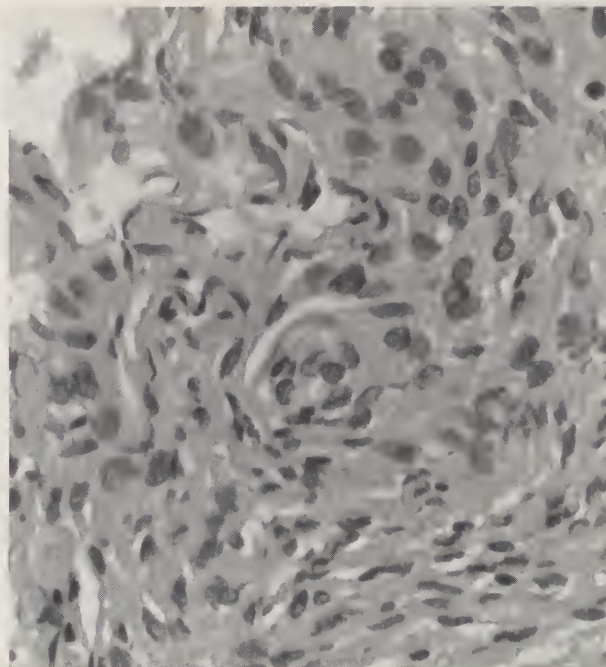


Figure 2. Microscopic section of meningotheliomatous meningioma (magnification 260x).

quencing and shifting. Memory lapses are common but not generally as severe as in SDAT. Altered personality is usually a prominent early feature, but in some individuals this change may be insidious. Most commonly, patients experience depression and abulia. In some diseases, notably Huntington's chorea and Wilson's disease, the patients may become paranoid or frankly psychotic. Hallucinations are more frequent in subcortical than in cortical diseases, as are associated extrapyramidal movement disorders and postural changes.

The presence in this patient of prolonged anosmia and an immense dural mass suggests that this slowly growing, benign neoplasm had been present for many years and probably originated from the olfactory groove, a common site for meningiomas. Such tumors frequently cause gradual or unilateral olfactory and visual loss of which the patient is unaware. Often, as in this case, the patient's altered mental activity and personality prompt medical evaluation. These patients are typically abulic-hypokinetic, bradyphrenetic, inattentive, impersistent, possibly drowsy and often inappropriately jocular.<sup>4</sup> Since these masses affect predominantly the frontal lobe, the patients may not exhibit the full range of subcortical features.

Kansas, as the eleventh "greyest" state in the nation, will experience the anticipated dementia epidemic earlier than most other states. In 52 counties in Kansas, the percentage of the population over age 65 exceeds 20%, and in 38 counties 3% of the population is 85 or more. In Elk, Smith and Republic counties, the elderly population is approximately 28%, a figure the rest of the nation will not attain until the year 2030.<sup>5</sup> Dementing illnesses of all types will affect 10-15% of people over the age of 65. Sixty percent of this dementia is due to SDAT, a diagnosis of exclusion that, at present, can be reliably diagnosed only at autopsy. The remaining disability is the result of a variety of mostly subcortical conditions, some of which, as in this case, are treatable.

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# Surveillance for Arboviral Disease in Kansas, 1993

**F**ollowing the flooding in Kansas during the summer of 1993, there were concerns that mosquito populations would increase, thus enhancing the potential for mosquito-borne diseases in the flood-affected counties of the state. The main disease of concern was arboviral encephalitis, since Kansas has had outbreaks of both St. Louis encephalitis (SLE) and western equine encephalitis (WEE) in the past. The last reported case of SLE in Kansas occurred in 1987, and the last case of WEE was reported in 1988.

With the assistance of the Centers for Disease Control and Prevention (CDC), the Kansas Department of Health and Environment (KDHE) began surveillance for arboviral disease. Mosquito trapping done by the military at Ft. Riley and Ft. Leavenworth during May through August and by the local health department in Douglas County on July 20–21 showed a low level of vector mosquitoes (i.e., *Culex pipiens*, the primary vector of SLE, and *Culex tarsalis*, the primary vector of WEE).

CDC staff conducted additional mosquito trapping in 6 counties during August 17–28 (see figure). SLE vector counts were low in Jefferson, Johnson and Riley counties and moderate in Doniphan, Shawnee and Douglas counties. WEE vector counts were very low in all except for Riley County. CDC tested a total of 6,258 mosquitoes in 139 pools for the presence of SLE and WEE viruses. No viruses were isolated, indicating a lack of arboviral activity in the areas surveyed. Although birds serve as the principal vertebrate host for arboviruses, no attempt was made to do avian trapping.

Surveillance for equine cases of WEE was done by KDHE in cooperation with the State Veterinarian and the School of Veterinary Medicine at Kansas State University. No cases of WEE in horses were identified. Surveillance for arboviral disease in humans did not result in the identifica-

tion of any confirmed cases. Although numerous suspected human cases were reported by physicians to KDHE, all specimens ( $n = 13$ ) submitted to CDC for testing were negative for SLE and WEE.

The results of surveillance for arboviral disease in Kansas were similar to results from surrounding midwestern states that were also affected by flooding. The low density of vector mosquitoes, combined with the lack of virus activity, indicated that there was very little potential for mosquito-borne disease this year in the areas surveyed.

Because the impact of the flooding in 1993 is expected to result in increased mosquito populations for several years, KDHE has applied for a federal grant to conduct active surveillance for arboviral disease in Kansas in 1994–95. If arboviral activity is detected in the state, the primary public health intervention will be to educate the public on avoiding mosquito bites by:

- scheduling outdoor activities when mosquitoes are less active (peak activity time for most mosquitoes is dawn and dusk);
- avoiding low, shaded, swampy areas;
- wearing protective clothing such as a hat, long-sleeved shirt, and long pants;
- applying mosquito repellents;
- eliminating potential breeding sites for mosquitoes such as old tires, tin cans, clogged gutters and any other areas where stagnant water can collect; and
- using screens on doors and windows. The secondary intervention for control of human disease will be the use of pesticides. The decision to use pesticides will need to be based on a number of factors: the effectiveness of mosquito control in preventing human illness, environmental impact, community acceptance, cost, availability of equipment and certified applicators, and climatic conditions. Indiscriminate use of pesticides is strongly discouraged and may be illegal.

Additional information on arboviral disease, including laboratory support for diagnosis, can be obtained by contacting the Bureau of Disease Control at 913-296-5586.

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**D**riving through Dodge City going west, one passes a statue of a longhorn steer before arriving at the historic area on Front Street which includes the Long Branch Saloon and Boot Hill cemetery. The inscription on the statue's base reads:

## EL CAPITAN

This statue commemorates the Texas Longhorn that gave Dodge City its place in history as the "Queen of the Cownowns." The Longhorns are descendants of Spanish cattle brought to Mexico in the 16th century. Between 1875 and 1886 over 4 million head were driven up the trail to the Santa Fe Railhead in Dodge City.

Although we rightly refer to Kansas as "the Wheat State" and "the Breadbasket of America," we should remember that fine grazing land such as the Flint Hills, with its bluestem grass, covers about one-third of the state and serves to make Kansas the fourth-largest beef-producing state. And one has only to drive through the Flint Hills and view the array of cattle breeds, a multi-colored mosaic against the lush grass, to realize the importance of the beef industry to our state.

Longhorns brought cowboys to the west, and Americans have always had a strange fascination with the old west and a romantic affair with the cowboy — an affair that idealized him beyond reality. Dodge City had its share of rough, tough cowboys and of lawmen brought in to tame them with the law of the six-gun. Wyatt Earp, "Wild Bill" Hickock and Bat Masterson all gained part of their fame in Dodge City. The most famous of them all (at least by television standards) was Marshal Matt Dillon of *Gunsmoke*, the longest-running TV western. This series gained Dodge City and Kansas international attention and fostered pride throughout the state.

Despite recent complaints that raising beef cattle is wasteful because of the amount of feed required and the quantity of waste they produce, the Kansas beef industry will most probably survive because Americans still consider beef such a satisfying food. In fact, on a visit to the Beef Room in the Royal Orleans Hotel in New Orleans, the maitre d'hotel assured us that only the finest Kansas beef was served. It was delicious!

You might wonder why we are featuring Jim Hamil's portrait of "El Capitan" during Thanksgiving season, but to us, as stalwart citizens of a beef state, it makes good sense. To paraphrase Robert Mitchum's pitch for the Beef Council, "Beef: It's what's for (Thanksgiving) dinner — Turkey!"

Enjoy!

# Midwestern PTCA Utilization Rates Are Highest

DONALD L. VINE, M.D.,\* *Wichita*

Intensified interest in the cost of medical care is leading to increased scrutiny of physician practice patterns and hospital charges. Topol and colleagues recently presented information from an insurance database with claims from 5.4 million individuals.<sup>1</sup>

During 1988 and 1989, 2,101 patients less than 65 years of age who underwent coronary angioplasty (PTCA) were identified. The average age was 54 years, and 79% were male. The primary diagnoses were recent acute myocardial infarction (AMI, 15%), unstable angina (UA, 13%) and stable coronary artery disease (72%). Ninety-six percent of the cases involved single-vessel disease.

## National Practice Patterns

The average length of stay (LOS) was about seven days. Approximate values for median hospital, physician and total charges were \$11,000, \$4,300 and \$16,000, respectively. The median follow-up charges were about \$5,000 during the first year.

The procedure was associated with a new diagnosis of acute myocardial infarction in 4.6% of cases. Coronary artery bypass grafting within seven days of the index procedure or repeat PTCA during the average follow-up period of one year was performed in 29% to 39%. Of patients requiring more than one PTCA, 81% underwent two procedures, 15% three, and 4% four. One patient had five PTCA procedures.

The authors found that 71% of patients had no exercise stress testing prior to the index angioplasty. They express concern that few patients received screening prior to PTCA, in spite of "established guidelines" recommending pre-procedure screening.

## Regional Practice Patterns

The table contrasts findings for the midwest with the rest of the nation. Half of the angioplasty procedures were performed on patients in the

Regional practice parameters for PTCA

	Midwest	Northeast	South	West
Number	987	239	507	326
<b>Proportions</b>				
% of PTCA patients	48%	12%	25%	16%
% of patients in DB	34%	19%	30%	17%
<b>Clinical</b>				
Recent MI or UA	29%	21%	30%	28%
Exercise test %	26%	33%	26%	35%
Single vessel %	96%	95%	97%	94%
LOS (days)	6.0	7.8	6.5	4.6
<b>Outcomes</b>				
AMI/year	5%	6%	7%	5%
Repeat PTCA	18%	16%	21%	20%
CABG	10%	14%	16%	19%
<b>Median Charges</b>				
Doctors	\$3,848	\$3,932	\$4,397	\$4,725
Hospitals	\$10,518	\$10,672	\$12,209	\$14,484
Total	\$14,517	\$14,870	\$16,552	\$19,026

Abbreviations: MI = Myocardial infarction, UA = Unstable angina, DB = Database

midwest, although such patients represented only one-third of the patients in the database.

Pre-procedure treadmill testing was less likely to be performed in the midwest than in the northeast or west. Other clinical findings and outcomes were similar to those in other parts of the nation. Total median charges were lowest in the midwest.

If the combined repeat PTCA or CABG rates represent clinical re-stenosis, then 29% to 39% suffered re-stenosis, with a rate of 30% for the midwest.

## Comments

Since the patients in this database were seen between 1988 and 1989 and the AHA/ACC guidelines suggesting treadmill testing were published in 1988, it is not surprising that there were so few that met this guideline.

Reasons for higher utilization rates in the midwest are not explained by this study, but insurance carriers are unlikely to conclude that too few procedures are being performed in the rest of the nation.

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\*Associate Professor, Department of Medicine, University of Kansas School of Medicine-Wichita.

Address correspondence to Dr. Vine, Department of Medicine, UKSM-W, 1010 N. Kansas, Wichita, KS 67214.



**Reference:** 1. Jones PH, et al. Once-daily pravastatin in patients with primary hypercholesterolemia: a dose-response study. *Clin Cardiol*. 1991;14:146-151.

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### WARNINGS

**Liver Enzymes:** HMG-CoA reductase inhibitors, like some other lipid-lowering therapies, have been associated with biochemical abnormalities of liver function. Increases of serum transaminase (ALT, AST) values to more than 3 times the upper limit of normal occurring on 2 or more (not necessarily sequential) occasions have been reported in 1.3% of patients treated with pravastatin in the U.S. over an average period of 18 months. These abnormalities were not associated with cholestasis and did not appear to be related to treatment duration. In those patients in whom these abnormalities were believed to be related to pravastatin and who were discontinued from therapy, the transaminase levels usually fell slowly to pretreatment levels. These biochemical findings are usually asymptomatic although worldwide experience indicates that anorexia, weakness, and/or abdominal pain may also be present in rare patients.

As with other lipid-lowering agents, liver function tests should be performed during therapy with pravastatin. Serum aminotransferases, including ALT (SGPT), should be monitored before treatment begins, every six weeks for the first three months, every eight weeks during the remainder of the first year, and periodically thereafter (e.g., at about six-month intervals). Special attention should be given to patients who develop increased transaminase levels. Liver function tests should be repeated to confirm an elevation and subsequently monitored at more frequent intervals. If increases in AST and ALT equal or exceed three times the upper limit of normal and persist, then therapy should be discontinued. Persistence of significant aminotransferase elevations following discontinuation of therapy may warrant consideration of liver biopsy.

Active liver disease or unexplained transaminase elevations are contraindications to the use of pravastatin (see CONTRAINDICATIONS). Caution should be exercised when pravastatin is administered to patients with a history of liver disease or heavy alcohol ingestion (see CLINICAL PHARMACOLOGY: Pharmacokinetics/Metabolism). Such patients should be closely monitored, started at the lower end of the recommended dosing range, and titrated to the desired therapeutic effect.

**Skeletal Muscle:** Rhabdomyolysis with renal dysfunction secondary to myoglobinuria has been reported with pravastatin and other drugs in this class. Uncomplicated myalgia has also been reported in pravastatin-treated patients (see ADVERSE REACTIONS). Myopathy, defined as muscle aching or muscle weakness in conjunction with increases in creatine phosphokinase (CPK) values to greater than 10 times the upper limit of normal was reported to be possibly due to pravastatin in only one patient in clinical trials (<0.1%). Myopathy should be considered in any patient with diffuse myalgias, muscle tenderness or weakness, and/or marked elevation of CPK. Patients should be advised to report promptly unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever. **Pravastatin therapy should be discontinued if markedly elevated CPK levels occur or myopathy is diagnosed or suspected. Pravastatin therapy should also be temporarily withheld in any patient experiencing an acute or serious condition predisposing to the development of renal failure secondary to rhabdomyolysis, e.g., sepsis; hypotension; major surgery; trauma; severe metabolic, endocrine, or electrolyte disorders; or uncontrolled epilepsy.**

The risk of myopathy during treatment with lovastatin is increased if therapy with either cyclosporine, gemfibrozil, erythromycin, or niacin is administered concurrently. There is no experience with the use of pravastatin together with cyclosporine. Myopathy has not been observed in clinical trials involving small numbers of patients who were treated with pravastatin together with niacin. One trial of limited size involving combined therapy with pravastatin and gemfibrozil showed a trend toward more frequent CPK elevations and patient withdrawals due to musculoskeletal symptoms in the group receiving combined treatment as compared with the groups receiving placebo, gemfibrozil, or pravastatin monotherapy. Myopathy was not reported in this trial (see PRECAUTIONS: Drug Interactions). One patient developed myopathy when clofibrate was added to a previously well tolerated regimen of pravastatin; the myopathy resolved when clofibrate therapy was stopped and pravastatin treatment continued. **The use of fibrates alone may occasionally be associated with myopathy. The combined use of pravastatin and fibrates should generally be avoided.**

### PRECAUTIONS

**General:** Pravastatin may elevate creatine phosphokinase and transaminase levels (see ADVERSE REACTIONS). This should be considered in the differential diagnosis of chest pain in a patient on therapy with pravastatin.

**Homozygous Familial Hypercholesterolemia.** Pravastatin has not been evaluated in patients with rare homozygous familial hypercholesterolemia. In this group of patients, it has been reported that HMG-CoA reductase inhibitors are less effective because the patients lack functional LDL receptors.

**Renal Insufficiency:** A single 20 mg oral dose of pravastatin was administered to 24 patients with varying degrees of renal impairment (as determined by creatinine clearance). No effect was observed on the pharmacokinetics of pravastatin or its 3 $\alpha$ -hydroxy isomeric metabolite (SQ 31,906). A small increase was seen in mean AUC values and half-life (t<sub>1/2</sub>) for the inactive enzymatic ring hydroxylation metabolite (SQ 31,945). Given this small sample size, the dosage administered, and the degree of individual variability, patients with renal impairment who are receiving pravastatin should be closely monitored.

**Information for Patients:** Patients should be advised to report promptly unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever.

**Drug Interactions:** Immunosuppressive Drugs, Gemfibrozil, Niacin (Nicotinic Acid), Erythromycin: See WARNINGS: Skeletal Muscle.

**Antipyrine:** Clearance by the cytochrome P450 system was unaltered by concomitant administration of pravastatin. Since pravastatin does not appear to induce hepatic drug-metabolizing enzymes, it is not expected that any significant interaction of pravastatin with other drugs (e.g., phenytoin, quinidine) metabolized by the cytochrome P450 system will occur.

**Cholestyramine/Colestipol:** Concomitant administration resulted in an approximately 40 to 50% decrease in the mean AUC of pravastatin. However, when pravastatin was administered 1 hour before or 4 hours after cholestyramine or 1 hour before colestipol and a standard meal, there was no clinically significant decrease in bioavailability or therapeutic effect. (See DOSAGE AND ADMINISTRATION: Concomitant Therapy.)

**Warfarin:** In a study involving 10 healthy male subjects given pravastatin and warfarin concomitantly for 6 days, bioavailability parameters at steady state for pravastatin (parent compound) were not altered. Pravastatin did not alter the plasma protein-binding of warfarin. Concomitant dosing did increase the AUC and C<sub>max</sub> of warfarin but did not produce any changes in its anticoagulant action (i.e., no increase was seen in mean prothrombin time after 6 days of concomitant therapy). However, bleeding and extreme prolongation of prothrombin time has been reported with another drug in this class. Patients receiving warfarin-type anticoagulants should have their prothrombin times closely monitored when pravastatin is initiated or the dosage of pravastatin is changed.

**Cimetidine:** The AUC<sub>0-12h</sub> for pravastatin when given with cimetidine was not significantly different from the AUC for pravastatin when given alone. A significant difference was observed between the AUC's for pravastatin when given with cimetidine compared to when administered with antacid.

**Digoxin:** In a crossover trial involving 18 healthy male subjects given pravastatin and digoxin concurrently for 9 days, the bioavailability parameters of digoxin were not affected. The AUC of pravastatin tended to increase, but the overall bioavailability of pravastatin plus its metabolites SQ 31,906 and SQ 31,945 was not altered.

**Gemfibrozil:** In a crossover study in 20 healthy male volunteers given concomitant single doses of pravastatin and gemfibrozil, there was a significant decrease in urinary excretion and protein binding of pravastatin. In addition, there was a significant increase in AUC, C<sub>max</sub>, and T<sub>max</sub> for the pravastatin metabolite SQ 31,906. Combination therapy with pravastatin and gemfibrozil is generally not recommended.

In interaction studies with aspirin, antacids [1 hour prior to PRAWACHOL (pravastatin sodium)], cimetidine, nicotinic acid, or probucol, no statistically significant differences in bioavailability were seen when PRAWACHOL was administered.

**Other Drugs:** During clinical trials, no noticeable drug interactions were reported when PRAWACHOL was added to: diuretics, antihypertensives, digitalis, converting-enzyme inhibitors, calcium channel blockers, beta-blockers, or nitroglycerin.

**Endocrine Function:** HMG-CoA reductase inhibitors interfere with cholesterol synthesis and lower circulating cholesterol levels, and, as such, might theoretically blunt adrenal or gonadal steroid hormone production. Results of clinical trials with pravastatin in males and post-menopausal females were inconsistent with regard to possible effects of the drug on basal steroid hormone levels. In a study of 21 males, the mean testosterone response to human chorionic gonadotropin was significantly reduced (p<0.004) after 16 weeks of treatment with 40 mg of pravastatin. However, the percentage of patients showing a  $\geq 50\%$  rise in plasma testosterone after human chorionic gonadotropin stimulation did not change significantly after therapy in these patients. The effects of HMG-CoA reductase inhibitors on spermatogenesis and fertility have not been studied in adequate numbers of patients. The effects, if any, of pravastatin on the pituitary-gonadal axis in pre-menopausal females are unknown. Patients treated with pravastatin who display clinical evidence of endocrine dysfunction should be evaluated appropriately. Caution should also be exercised if an HMG-CoA reductase inhibitor or other agent used to lower cholesterol levels is administered to patients also receiving other drugs (e.g., ketoconazole, spironolactone, cimetidine) that may diminish the levels or activity of steroid hormones.

**CNS Toxicity:** CNS vascular lesions, characterized by perivascular hemorrhage and edema and mononuclear cell

infiltration of perivascular spaces, were seen in dogs treated with pravastatin at a dose of 25 mg/kg/day, a dose that produced a plasma drug level about 50 times higher than the mean drug level in humans taking 40 mg/day. Similar CNS vascular lesions have been observed with several other drugs in this class.

A chemically similar drug in this class produced optic nerve degeneration (Wallerian degeneration of retinogeniculate fibers) in clinically normal dogs in a dose-dependent fashion starting at 60 mg/kg/day, a dose that produced mean plasma drug levels about 30 times higher than the mean drug level in humans taking the highest recommended dose (as measured by total enzyme inhibitory activity). This same drug also produced vestibulocochlear Wallerian-like degeneration and retinal ganglion cell chromatolysis in dogs treated for 14 weeks at 180 mg/kg/day, a dose which resulted in a mean plasma drug level similar to that seen with the 60 mg/kg/day dose.

**Carcinogenesis, Mutagenesis, Impairment of Fertility:** In a 2-year study in rats fed pravastatin at doses of 10, 30, or 100 mg/kg body weight, there was an increased incidence of hepatocellular carcinomas in males at the highest dose (p<0.01). Although rats were given up to 125 times the human dose (HD) on a mg/kg body weight basis, their serum drug levels were only 6 to 10 times higher than those measured in humans given 40 mg pravastatin as measured by AUC.

The oral administration of 10, 30, or 100 mg/kg (producing plasma drug levels approximately 0.5 to 5.0 times human drug levels at 40 mg) of pravastatin to mice for 22 months resulted in a statistically significant increase in the incidence of malignant lymphomas in treated females when all treatment groups were pooled and compared to controls (p<0.05). The incidence was not dose-related and male mice were not affected.

A chemically similar drug in this class was administered to mice for 72 weeks at 25, 100, and 400 mg/kg body weight, which resulted in mean serum drug levels approximately 3, 15, and 33 times higher than the mean human serum drug concentration (as total inhibitory activity) after a 40 mg oral dose. Liver carcinomas were significantly increased in high-dose females and mid- and high-dose males, with a maximum incidence of 90 percent in males. The incidence of adenomas of the liver was significantly increased in mid- and high-dose females. Drug treatment also significantly increased the incidence of lung adenomas in mid- and high-dose males and females. Adenomas of the eye Harderian gland (a gland of the eye of rodents) were significantly higher in high-dose mice than in controls.

No evidence of mutagenicity was observed *in vitro*, with or without rat-liver metabolic activation, in the following studies: microbial mutagen tests, using mutant strains of *Salmonella typhimurium* or *Escherichia coli*; a forward mutation assay in L5178Y TK + / - mouse lymphoma cells; a chromosomal aberration test in hamster cells; and a gene conversion assay using *Saccharomyces cerevisiae*. In addition, there was no evidence of mutagenicity in either a dominant lethal test in mice or a micronucleus test in mice.

In a study in rats, with daily doses up to 500 mg/kg, pravastatin did not produce any adverse effects on fertility or general reproductive performance. However, in a study with another HMG-CoA reductase inhibitor, there was decreased fertility in male rats treated for 34 weeks at 25 mg/kg body weight, although this effect was not observed in a subsequent fertility study when this same dose was administered for 11 weeks (the entire cycle of spermatogenesis, including epididymal maturation). In rats treated with this same reductase inhibitor at 180 mg/kg/day, seminiferous tubule degeneration (necrosis and loss of spermatogenic epithelium) was observed. Although not seen with pravastatin, two similar drugs in this class caused drug-related testicular atrophy, decreased spermatogenesis, spermatocytic degeneration, and giant cell formation in dogs. The clinical significance of these findings is unclear.

**Pregnancy: Pregnancy Category X:** See CONTRAINDICATIONS.

Safety in pregnant women has not been established. Pravastatin was not teratogenic in rats at doses up to 1000 mg/kg daily or in rabbits at doses of up to 50 mg/kg/day. These doses resulted in 20x (rabbit) or 240x (rat) the human exposure based on surface area (mg/meter<sup>2</sup>). However, in studies with another HMG-CoA reductase inhibitor, skeletal malformations were observed in rats and mice. PRAWACHOL (pravastatin sodium) should be administered to women of child-bearing potential only when such patients are highly unlikely to conceive and have been informed of the potential hazards. If the woman becomes pregnant while taking PRAWACHOL, it should be discontinued and the patient advised again as to the potential hazards to the fetus.

**Nursing Mothers:** A small amount of pravastatin is excreted in human breast milk. Because of the potential for serious adverse reactions in nursing infants, women taking PRAWACHOL should not nurse (see CONTRAINDICATIONS).

**Pediatric Use:** Safety and effectiveness in individuals less than 18 years old have not been established. Hence, treatment in patients less than 18 years old is not recommended at this time. (See also PRECAUTIONS: General.)

### ADVERSE REACTIONS

Pravastatin is generally well tolerated; adverse reactions have usually been mild and transient. In 4-month long placebo-controlled trials, 1.7% of pravastatin-treated patients and 1.2% of placebo-treated patients were discontinued from treatment because of adverse experiences attributed to study drug therapy; this difference was not statistically significant. In long-term studies, the most common reasons for discontinuation were asymptomatic serum transaminase increases and mild, non-specific gastrointestinal complaints. During clinical trials the overall incidence of adverse events in the elderly was not different from the incidence observed in younger patients.

**Adverse Clinical Events:** All adverse clinical events (regardless of attribution) reported in more than 2% of pravastatin-treated patients in the placebo-controlled trials are identified in the table below; also shown are the percentages of patients in whom these medical events were believed to be related or possibly related to the drug.

Body System/Event	All Events %		Events Attributed to Study Drug %	
	Pravastatin (N = 900)	Placebo (N = 411)	Pravastatin (N = 900)	Placebo (N = 411)
Cardiovascular				
Cardiac Chest Pain	4.0	3.4	0.1	0.0
Dermatologic				
Rash	4.0*	1.1	1.3	0.9
Gastrointestinal				
Nausea/Vomiting	7.3	7.1	2.9	3.4
Diarrhea	6.2	5.6	2.0	1.9
Abdominal Pain	5.4	6.9	2.0	3.9
Constipation	4.0	7.1	2.4	5.1
Flatulence	3.3	3.6	2.7	3.4
Heartburn	2.9	1.9	2.0	0.7
General				
Fatigue	3.8	3.4	1.9	1.0
Chest Pain	3.7	1.9	0.3	0.2
Influenza	2.4*	0.7	0.0	0.0
Musculoskeletal				
Localized Pain	10.0	9.0	1.4	1.5
Myalgia	2.7	1.0	0.6	0.0
Nervous System				
Headache	6.2	3.9	1.7*	0.2
Dizziness	3.3	3.2	1.0	0.5
Renal/Genitourinary				
Urinary Abnormality	2.4	2.9	0.7	1.2
Respiratory				
Common Cold	7.0	6.3	0.0	0.0
Rhinitis	4.0	4.1	0.1	0.0
Cough	2.6	1.7	0.1	0.0

\*Statistically significantly different from placebo.

The following effects have been reported with drugs in this class:

**Skeletal:** myopathy, rhabdomyolysis.

**Neurologic:** dysfunction of certain cranial nerves (including alteration of taste, impairment of extra-ocular movement, facial paresis), tremor, vertigo, memory loss, paresthesia, peripheral neuropathy, peripheral nerve palsy.

**Hypersensitivity Reactions:** An apparent hypersensitivity syndrome has been reported rarely which has included one or more of the following features: anaphylaxis, angioedema, lupus erythematosus-like syndrome, polymyalgia rheumatica, vasculitis, purpura, thrombocytopenia, leukopenia, hemolytic anemia, positive ANA, ESR increase, arthritis, arthralgia, urticaria, asthenia, photosensitivity, fever, chills, flushing, malaise, dyspnea, toxic epidermal necrolysis, erythema multiforme, including Stevens-Johnson syndrome.

**Gastrointestinal:** pancreatitis, hepatitis, including chronic active hepatitis, cholestatic jaundice, fatty change in liver, and rarely, cirrhosis, fulminant hepatic necrosis, and hepatoma, anorexia, vomiting.

**Reproductive:** gynecomastia, loss of libido, erectile dysfunction.

**Eye:** progression of cataracts (lens opacities), ophthalmoplegia.

**Laboratory Test Abnormalities:** Increases in serum transaminase (ALT, AST) values and CPK have been observed (see WARNINGS).

Transient, asymptomatic eosinophilia has been reported. Eosinophil counts usually returned to normal despite continued therapy. Anemia, thrombocytopenia, and leukopenia have been reported with other HMG-CoA reductase inhibitors.

**Concomitant Therapy:** Pravastatin has been administered concurrently with cholestyramine, colestipol, nicotinic acid, probucol and gemfibrozil. Preliminary data suggest that the addition of either probucol or gemfibrozil to therapy with lovastatin or pravastatin is not associated with greater reduction in LDL-cholesterol than that achieved with lovastatin or pravastatin alone. No adverse reactions unique to the combination or in addition to those previously reported for each drug alone have been reported. Myopathy and rhabdomyolysis (with or without acute renal failure) have been reported when another HMG-CoA reductase inhibitor was used in combination with immunosuppressive drugs, gemfibrozil, erythromycin, or lipid-lowering doses of nicotinic acid. Concomitant therapy with HMG-CoA reductase inhibitors and these agents is generally not recommended. (See WARNINGS: Skeletal Muscle and PRECAUTIONS: Drug Interactions.)

### OVERDOSAGE

There have been no reports of overdoses with pravastatin.

Should an accidental overdose occur, treat symptomatically and institute supportive measures as required.



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Please see CONTRAINDICATIONS, WARNINGS, PRECAUTIONS, and ADVERSE REACTIONS in the brief summary of prescribing information on the adjacent page.



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# MEDICINE

JOURNAL OF THE KANSAS MEDICAL SOCIETY

December 1993

Volume 94, Number 12



Val Braun Retires Next Month



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# KANSAS MEDICINE

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## ABOUT OUR LOGO

In January 1935, a new logo appeared on the cover of KANSAS MEDICINE for the first time. This device represents two stethoscopes: the original monaural type as used by Laënnec, and the modern binaural variety. The logo was designed expressly for KANSAS MEDICINE by renowned graphic designer Bradbury Thompson, a native of Topeka and friend of two former editors of the journal, Dr. W.M. Mills and Dr. Lucien Pyle. As another former editor, Dr. Orville R. Clark, wrote in January 1955, the logo "has become as much a part of the journal as any of the features on the inside and is something which is ours alone."

## VOX DOX

### What's Up in Kansas? The Elevation!

To the Editor:

Did something drastic happen in Kansas while I was in California last month? In the Cover Story of the September issue of KANSAS MEDICINE, Kansas is described as sloping from 2,000 feet in the east to 4,000 feet in the west.

I have lived in Kansas almost all my life, have driven it from end to end, and used to fly over it. The old Fairfax Airport in Kansas City, Kansas, was 740 feet above sea level. Most of the eastern edge of Kansas is at 800 feet or less, unless a huge upheaval occurred without my knowledge!

*Lafe W. Bauer, M.D.  
Prairie Village*

*The Editor notes that the writer is correct in his statements regarding the elevations in the eastern — as opposed to the western — part of the state. The Editor would like to state that the error was a mistake by the printer. The Editor would like to state that the error occurred because of a misplaced decimal point. The Editor would like to state that the error was the first one made in his life.*

*The truth is the Editor took the figure from the World Book Encyclopedia, which states, "The Great Plains region covers the western two thirds of Kansas. It slopes upward from an average height of 2,000 feet above sea level in the east to about 4,000 feet on the Colorado border."*

*The Editor hopes that the writer and other kind readers will attribute the error to faulty reading rather than early Alzheimer's disease. At least it is comforting to know that someone is reading the Cover Story!*

# Loyalty

**T**he December issue of *Kansas Medicine* is dedicated to Associate Executive Director Val Braun, who has served the Kansas Medical Society and its Alliance faithfully and loyally for almost 35 years. She is most deserving of this honor — despite her protestations. Val is a very talented, competent, friendly, efficient, trustworthy individual and a joy to work with, as anyone who has had the pleasure of being associated with her will attest. She has earned her respite from the beehive of activity that oftentimes characterizes the workrooms of KMS. All of us wish her well and hope for only the best for the Brauns.



The Society has been blessed with loyal employees throughout its existence. Despite having to work with physicians, they have maintained their composure and sense of humor to an amazing degree. On behalf of the members of the Society and its Alliance, I thank them. But as we look around us in the 1990s, we see that loyalty not only seems to have become passé, but may even have become a dirty word.

No aspect of society has been untouched by this disintegration of values, and it can be seen in our personal, professional, business, social, political and religious lives. To remain faithful to a person, group, company, team, political party, denomination or country is foolish when it clashes with one's own aims or goals. Everyone wants to be on the winning team and the old motto, "It's not whether you win or lose, but how you play the game," is scorned. It seems out of date with modern times and has been replaced with, "What's in it for me?"

Professional athletes leave teams for more money or the chance to play for a "winner," and college coaches leave their teams for better opportunities, despite assurances to their student athletes that they will be around for them during their entire school career. Professors leave university posts for higher salaries, better research facilities, more assistants or other inducements. Husbands and wives abandon their spouses and children for reasons that in many instances seem very tenuous. Voters fail to support the party of their choice. Some Americans have even left their country rather than serve it in a war they felt was

unjust, showing no loyalty to a country whose benefits they enjoyed.

While it is easy to identify selfishness as the reason for the breakdown of loyalty, it may be only a symptom — though an important one — of an ideological conflict. Philosophers such as Immanuel Kant and Jeremy Bentham have argued that individuals should make decisions based not on selfish motives, but on impersonal calculations of what is best for society in general. The world has exploded with knowledge and technology we never dreamed of even a short time ago. Ethical dilemmas abound, and suddenly the world has become too complicated for ordinary people, let alone philosophers, to decide what is best for humanity at large. Faced with an overwhelming sense of futility, people look out for "number one."

While this loss of loyalty to someone or something may not seem to be such a great thing to lament, and there seems to be no short-term harm in it, in the long run this kind of thinking will be harmful to everyone individually and to the nation collectively.

Loyalty is built on relationships to persons, principles, ideals, values, etc. It assumes that the relationships we are born into, such as our families, or the relationships we choose, such as marriage, friends, church or employment, should continue, and that the bonds built by these relationships will strengthen both parties and eventually make us a stronger nation. Loyalty encourages us to accept the other party's good faith. It also includes a willingness to accept our own and others' mistakes.

In an interview, George P. Fletcher, Beekman Professor of Law at Columbia University and author of *Loyalty: An Essay on the Morality of Relationships*, stated, "Loyalty builds strong, long-lasting, mutual relationships that can help overcome temporary setbacks. . . . It leaves both sides better off in the long term."

During her recent visit to Wichita, Attorney General Janet Reno stressed the need for strong family values and ties. This is interesting, since at one time the federal government seemed bent on doing away with families altogether. The family has recently been recognized as the foundation of civilization, where values, morals and loyalty are learned. The emphasis on personal happiness



over loyalty to others has in large measure led to the breakup of the family.

Professor Fletcher, in the interview, listed five steps to loyalty: affirmation, confrontation, complicity, ritual and privacy. *Affirmation* is simply showing by word and deed that you appreciate what someone (family member, friend, co-worker, etc.) has done for you. Involvement in our own busywork often makes us forget to say simple things such as, "Thank you."

*Confrontation* is not meant in the modern sense of throwing down the gauntlet, but in the sense of mentioning to another, in a constructive way, why you disapprove of his words or actions, and stressing that your relationship is important to you and that you are trying to improve it to build stronger ties.

*Complicity* shows that you and your partner(s) share a special relationship — something nobody else has that is separate from the rest of the world, something that you feel very happy to have.

*Ritual* is not a routine, unthinking drudgery, but finding ways to do things for those special people within your circle.

The last step is *privacy*. The details of a shared relationship are no one else's business. Today we seem to feel that our private conduct must meet some standard set by friends or society. But we should never complain about a partner or friend to outsiders.

Loyalty is fine when everything is going well, but its true test, and its toughest challenge, occurs when the going gets tough. Professor Fletcher remarked, "Loyalty becomes important only when we are tempted to 'jump ship.' Fair weather loyalty is but convenience. The next time you are tempted to leave, think: 'This is the time to show my loyalty.'"

Thank you, Val, for your years of devoted service and true loyalty to KANSAS MEDICINE, the Kansas Medical Society, the Kansas Medical Society Auxiliary (now Alliance) and the other individuals who have benefited from knowing you. God bless you — we will all miss you. W.E.M.



"Ron's Rule—I give myself one week to meet new people and start having fun on a locum tenens assignment. It hasn't failed me yet."

Ron Richmond, MD, joined the CompHealth locum tenens medical staff when he completed his residency. He wanted to travel. He loves to meet people.

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## Executive Dean Named at Med School

**D**aniel Hollander, M.D., 54, of the University of California College of Medicine, Irvine, will succeed James G. Price, M.D., as Executive Dean at KU Medical School, early in 1994. A gastroenterologist with an interest in Crohn's disease, Dr. Hollander has done molecular research on the digestive and immune systems. He trained as a resident in internal medicine at KU after earning his medical degree at Baylor.

Dr. Hollander worked with managed-care programs at the University of California and will help KU make the transition from traditional medical school to an institution competitive in a managed-care environment, according to D. Kay Clawson, M.D., executive vice chancellor.

In a prepared statement, Dr. Hollander said, "Many people at KU underestimate how good the institution really is. I hope to help them appreciate what they have done already because the base we have to build on is truly outstanding."

# Report from the HMSS Assembly

**E**arlier this month I spent several days in New Orleans, attending first the Hospital Medical Staff Section Assembly, preceded by a strategy session involving state chairmen and caucus chairmen, and then the 47th AMA Interim Meeting of the House of Delegates. Many important topics were examined at both meetings, but in this report I will concentrate on the issues discussed at the HMSS Assembly, which was attended by 400 representatives.



Not surprisingly, much discussion centered on health care reform. Of the states represented, only one was not involved in developing a statewide health care plan. Many state medical societies are responding by forming statewide entities. In fact, New York already has an independent practice association (IPA), their fee schedule is completed, and contracts are now going out. (In another issue from New York, the state has charged a nursing home doctor with murder for poor care allegedly rendered by him.)

New Hampshire's representatives reported that at present 50% of the state's physicians are employed by hospitals, and there are no nonemployed physicians at several of the hospitals. New Hampshire has a provider tax which has been used to salvage the state's Medicaid program.

Virginia is starting a statewide preferred provider organization (PPO). The Delaware representative stated that they have the highest percentage of HMO patients in the country and still remain non-militant.

The unique problems of California were discussed, focusing on L.A. County, which has 10 million residents, plus another 5 million commuters, and 20,000 physicians, 94% HMO or government-pay sources and many hospital independent practice associations (IPAs).

Recently Kentucky's 2% provider tax and a cap on provider fees were overturned by their state supreme court on an equal protection basis.

The District of Columbia is forming a doctors' alliance which is basically a bargaining unit. And in Illinois, Blue Cross/Blue Shield has recently unilaterally imposed practice guidelines on all practitioners in the state.

The State of Washington's medical association has just formed a certified health plan, but they have many Federal Trade Commission concerns. They asked if anyone present has had any response from the FTC, but apparently no one has.

Numerous important items were considered by the reference committees. Please contact me if you would like information about the following:

- Handgun/automatic weapon control. There was much discussion on various aspects of control.

- An excellent board report with discussion of substitution of only A-rated generics.

- Screening of medical staffs for immunizations, drugs and disease; and the implications of these requirements.

- National Practitioner Data Bank report on economic profiling, including guidelines for what may be appropriate and what is definitely not appropriate in developing these profiles.

- Exclusive contracting, and the role of the medical staff in that process.

- Various aspects of due process.

- Twelve important principles to be followed in amending medical staff bylaws. This topic is discussed in "Report D" from the Governing Council, which may be requested from HMSS.

- Guidelines for the medical staff role in exclusive contracts and the potential conflict-of-interest issues are discussed in "Report E."

- The Clinton health bill: opposition to the National Health Board as currently being formulated. Recommendation that a physician representative must be present.

- Any willing provider provision and laws relating to restriction by insurance plans or, perhaps, the Clinton alliances on physicians applying for membership.

- Consumer demand as a driving force in health care costs, and our need to emphasize this issue.

- A new requirement by the Health Care Financing Administration requiring physicians to obtain a new provider number when billing for durable medical equipment.

- Important new HCFA guidelines: they will be reviewing claims for concurrent care by any physicians, and they will pay for only one episode

*(Continued on page 331.)*



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# Ethics Committees

WAYNE T. STRATTON, J.D.,\* *Topeka*

**A**s technology adds new dimensions to patient care, treatment decisions become increasingly complex. Today, as never before, decisions relating to treatment at the beginning and end of life gain additional significance in light of current debates on health care resources. Not all judicial decisions result in the termination of care, as with Nancy Cruzan. The recent cases of Baby K and Helen Waglie demonstrate that society has an interest in continuing treatment as well.



While questions centering around the beginning and end of life form the most dramatic ethical dilemmas, not all ethical decisions involve life-sustaining therapies. Most are as commonplace as a minor's request for treatment with absolute confidentiality, or HIV treatment-related issues. Simple or complex, the only certain factor is that ethical issues in medical care will confront practitioners with increasing frequency. Physicians can receive assistance with ethical concerns from their hospital's ethics committee.

Ethics committees assist physicians, patients, families and other involved parties in making sound decisions. In 1983 there were only 37 such committees nationwide; today there are more than 3,500. Ethics committees vary in function, composition, expertise and collective wisdom. At best, they provide an interdisciplinary forum to present data about patient care issues and to air varying perspectives. Their assistance can be an invaluable form of consultation, resulting in a clear articulation of the issues and subsequently achieving consensus among the persons involved.

Physicians have always been advised to seek consultations. The Hippocratic Oath and all of the AMA Codes of Ethics encourage them. In

1976 a New Jersey court in the Karen Ann Quinlan case opined that such committees would be invaluable in decisions involving withdrawal of life support. Later, a presidential committee investigating that issue and federal regulations governing treatment of disabled infants recommended the creation of ethics committees. Now the Joint Commission on Accreditation of Healthcare Organizations supports such mechanisms for resolution of ethical issues relating to patient care.

Typically, ethics committees serve three functions: education, policy development and case consultation. The educational function exists to promote awareness of bioethical issues among committee members, hospital staff and the community. Educational efforts improve health care and patient autonomy and demonstrate commitment to the protection of patient rights and community values. Ethics committees also draft or examine institutional policies to define the limits of ethical and legal behavior. Perhaps the best publicized aspect of ethics committees involves case consultation. The effectiveness of an ethics committee in a consultative capacity hinges on the level of access to the committee by patients, family members, physicians and other individuals involved with the patient's treatment. A diverse committee, trained in the principles of ethical decision-making, can assist all parties in exploring options and in reaching a treatment consensus through education, clarification of issues and open discussion. Ethics committees performing case reviews typically function as a consultative body only, serving as advisors to those involved in the patient's care. As with all treatment decisions, the implementation of an ethics committee recommendation is ultimately a matter between the physician and patient.

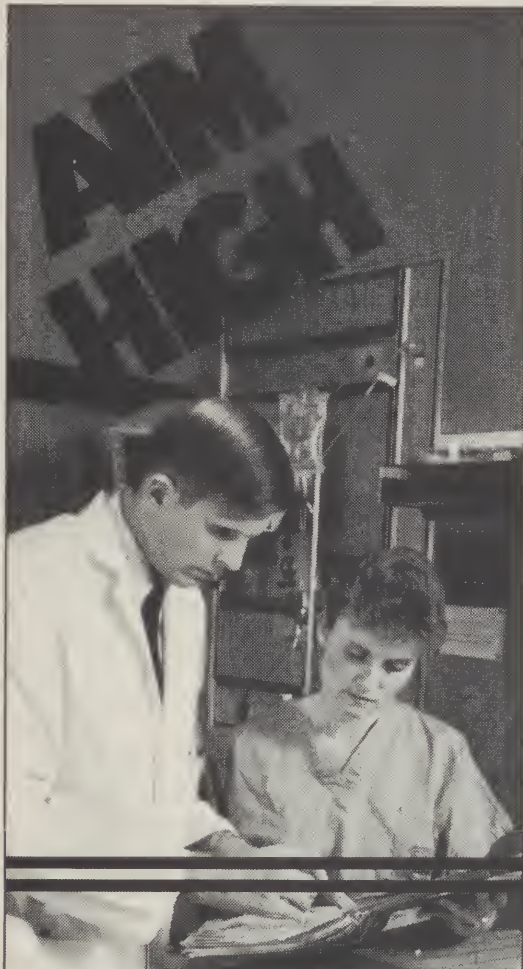
Often an ethics consultation has eliminated the need for judicial intervention. The judiciary has frequently commented, and attorneys tend to agree, that the last place for ethical issues to be resolved is in the courts. With active physician involvement in establishing, maintaining and consulting with ethics committees, judicial intervention should be a less likely means of resolution in the future.

\*KMS Legal Counsel.

Comments appearing herein are not intended as a substitute for legal analysis or advice. Answers to legal questions depend largely upon the particular facts of a case. The reader is urged to consult an attorney for answers to specific legal questions.

These comments do not necessarily represent the views of KANSAS MEDICINE, or the Kansas Medical Society. For further information, contact Mr. Stratton, 515 S. Kansas, Topeka, KS 66603.





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# A Season for Children

**D**ear Physicians of Kansas,

As we prepare for our holiday festivities, we are likely to have many thoughts of holidays past. Perhaps the strongest image in my own mind at this time is of children. It is difficult to think of holidays without recalling bright eyes full of wonder and amazement, giggles, lights, presents, traditional food and the bustle of preparations.



This is a season of giving, not only to our families but also to those in need. Probably you, as a physician, or your spouse on your behalf, will give generously to help children in your community who need toys or clothing. I believe that physicians, with their naturally caring spirit, have a genuine interest in the future of children. The well-being of Kansas children is an issue critical to the future of our state.

Fortunately, awareness of our children's problems is increasing. Momentum is building in the Legislature and in local communities, with initiatives to improve living conditions for Kansas children. Citizens at every level are challenged to envision the role they can play.

Unfortunately, the problems facing our children are pervasive. Many Kansans believe that only poor children are at risk. But the findings are clear: children throughout the state, at all income levels, are experiencing serious difficulties.

Immunization data provide a good example. Statewide, 51% of Kansas two-year-olds are fully immunized. Many persons have assumed lack of immunization is a "big-city" problem, but "Kansas Kids Count" data (compiled by Kansas Action for Children) show that in 1990 the immunization rate in urban Sedgwick County was the same as that in rural Ellsworth and Morris counties: 54%. Immunization levels are a concern in nearly all counties in Kansas, regardless of size or region.

During the 1980s, the number of Kansas children living in poverty rose 25%. In 1980 approximately 11 of every 100 children lived in poverty. By 1990, the rate had increased to more than 14 of every 100 children. Though Kansas is still below the national poverty rate of 19%, we are concerned with this increase. In seven Kansas counties, the problem is particularly acute. In Bourbon, Chase, Chautauqua, Cherokee, Morton, Wallace

*KMSA salutes the dedicated service of Val Braun as liaison to the Alliance. Val, we will miss your friendship, your smile, your camaraderie and the support and direction you have given us through the years. THANK YOU! We wish you many happy, carefree days ahead.*  
— Love from all Kansas Medical Society Alliance members throughout Kansas.

and Wyandotte counties, 25% of children — one in four — lived in poverty in 1989. All but one of these counties is rural. Living in poverty causes children a host of related problems, especially involving access to health care and educational concerns. The eroding economic well-being of Kansas children is a "hazardous conditions" road sign for our state.

The signs relating to child abuse in Kansas can be confusing. Of all the child abuse/neglect reports filed with SRS, Kansas had a rate of confirmed child abuse and neglect of 363.50 per 100,000 children under 18, or 3.6 for every 1,000 children. Counties with high rates of confirmed child abuse are Clay, Harvey, Osage, Pratt and Wyandotte. Such a high rate may signal that the area needs to confront the problem — or it may mean that the area has innovative and effective programs to encourage reporting and investigation of child abuse.

The single most troubling report is the rapidly increasing number of births to single teens in Kansas. Over a 10-year period, 1980 to 1990, such births increased nearly 40%. Nationally, births to single teens have increased just 14%. Sharp increases in births to single teens have occurred all over Kansas. Thirteen counties had 50 or more births to single teens in 1990, and each experienced an increase between 1980 and 1990. Cowley County's births to single teens jumped 189%. Other counties with large numbers of births to single teens, as well as high rates of increase, include Ford, Geary, Montgomery, Reno and Saline.

Some Kansas counties are overwhelmed with problems involving their children. Areas which rank high in these statistics may need special support to address their difficulties. As medical pro-

*(Continued on page 336.)*





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# Ave Atque Vale, Val!\*

SUSAN WARD, *Production Editor*

**T**he life of an organization and the people within it is made up of ebbs and flows, beginnings and endings. These often overlap and blend into one another, much the way waves begin far out at sea, gaining in size and momentum, overtaking and absorbing other waves — or being absorbed — and finally reaching the shore, crashing majestically against a craggy coastline or lapping a sandy beach. As each approaches its destination, others are constantly developing. So it is with the activities of an organization, and of the people within it. The Kansas Medical Society has experienced this phenomenon, a few recent examples being the creation of KaMMCO and MSC, the move to a new building, the annual installation of new officers, the ongoing work of committees, and the preparations for a national health care reform program. Now comes another transition in the life of KMS: the retirement at the end of January of Val Braun, Associate Executive Director, staff member at the medical society since May 13, 1959 — and a sort of beneficent tsunami, or giant wave, on the KMS coastline.

The marine metaphor is an appropriate one in this case, for Val is irresistibly drawn to ocean beaches, despite her long residence in a landlocked state. Of her position as KMS Associate Executive Director, Val says, "I am very glad that I was around at the right place and time to fill the need." But it was something of a miracle that she was.

## Early Years

When she arrived at KMS, Val had already experienced more ebbs and flows than many individuals encounter in a lifetime. And she had struggled to get here.

A native of Romania, Valentine Lange was the only child of Peter and Helen Lange, an engineer and an agronomist, respectively. They thought a career in medicine would be a fine one for their accomplished daughter and had even narrowed the selection of a specialty down to two: surgery

or pediatrics. Unfortunately, when Val was 10 years old, escalating political unrest just prior to World War II set into motion a sequence of events that changed her family's life forever. The Langes were forced to abandon their elegant home and flee Romania, dodging bombs and guerrillas' bullets on the way. Over the next six years, they moved from one eastern European city to another, counting themselves fortunate simply to have shelter and some meager rations.

Her family stayed in Bavaria, in the American sector of postwar occupied Europe, for about four years, and Val began her study of English by memorizing 20 new words a day from an English-German dictionary. From another immigrant woman she learned typing, and eventually she was hired as a typist and interpreter at a nearby Mennonite Central Committee refugee camp, where she met her future husband, Alexander Braun. The Langes hoped to emigrate to the United States. Al, his father and two brothers were waiting to go to Canada, where they had relatives. At last all the arrangements were made for the two families to leave within a month of each other. Expecting it would be easy to get together once they were in North America, Val and Al said their good-byes.

When they arrived in Newton, Kansas, on May 5, 1949, the Lange family was taken to the home that had been prepared for them by their sponsor. It was a converted railroad car — not wonderful, but a start. Even less wonderful was the immigration law that prevented Al from joining them in the United States.

Two years later, the Langes were still trying to find a way for Al to come to America. Due to strict U.S. immigration laws, Al could not enter the country even briefly. The Canadian laws were more liberal, so in 1951 the Langes traveled to Canada for a visit, and Val and Al decided to marry then. But it was still two and a half years before Al was able to enter the United States. By then, Val and her parents had moved to Topeka. After waiting so long to get here, Al announced that he would not be uprooted again, so Val never considered any job offers that would require relocation.

\*(Hail and Farewell, Val!)





*Val, about the time she began working at KMS.*

### Val's Early Career

Val graduated from Washburn University with a triple major and honors in all three departments. Later she earned her M.P.A. with honors from KU and was inducted into Pi Sigma Alpha, the political science honor society. She holds a Kansas teaching license with certification to teach at the secondary level.

From 1955 to 1959, Val worked at the Shawnee County Medical Society. She was hired at the Kansas Medical Society during its centennial year by Oliver E. Ebel, long-time Executive Secretary (precursor to the position of Executive Director). Thomas P. Butcher, M.D., of Emporia, was President. In 1959 there were just four staff members at KMS, and the office space, at 315 West 4th Street, Topeka, was rented from the Shawnee County Medical Society. Val's position was secretary and accountant, and her duties included planning, setting up and managing the annual meeting; many dealings with the KU School of Medicine to arrange postgraduate circuit courses; some legislative contacts; managing the office; and other tasks.

After several years of working closely with KMS Treasurer Chester M. Lessenden, M.D., Val

chose to concentrate her efforts on the areas of accounting and working as *Journal of the Kansas Medical Society* Managing Editor. This meant less involvement with the day-to-day operations of the society, but a very full workday.

In 1972 KMS established the Kansas Foundation for Medical Care (KFMC). The new organization needed help with accounting so, in addition to her KMS duties, Val provided part-time assistance during its infancy. In 1974 the KFMC Board offered Val the position of assistant director at that organization, but KMS President John N. Blank, M.D., refused to release her from her employment with KMS — an indication of how highly the medical society valued her.

In 1975 Jerry Slaughter gave Val the title of Executive Assistant and changed the mix of duties. Then, in 1978, she became Assistant Director and had additional assignments which included staffing committees and serving as liaison to Blue Cross-Blue Shield, the Kansas Association of School Health and others. She also traveled extensively during this period, giving workshops on practice management around the state. And soon she became liaison to the KMS Auxiliary, a very enjoyable and challenging relationship.

### Growing Responsibilities

In May 1984, during the brief tenure of Steve Carter as Executive Director, Val was brought back into the mainstream of KMS business, having responsibility for 16 standing KMS committees; Mediserve; membership; *KMS Newsletter*; clerical personnel; building and grounds maintenance and general KMS correspondence; serving as government affairs (SRS and KDHE) and Board of Healing Arts liaison; and continuing her supervisory duties for the *Journal of the Kansas Medical Society* (later renamed KANSAS MEDICINE). She also assisted the Executive Director with special projects and assignments.

The following year, Jerry Slaughter added still more items to her job description in lieu of accounting. They were: AMA Liaison and staff representative to the Kansas Delegation to the AMA; providing services to staff of affiliated organizations, such as clinic managers, county medical society executives, etc.; Medicare; specialty medical societies liaison (other than bookkeeping); Committee on Aging and Committee on Ethics; staff representative to the Council and Executive Committee; and KMS liaison to state and public agencies.

This range of subjects required knowledge of



*At the AAMA (medical assistants) annual meeting, 1974.*

many different areas, and Val commented that she “needed to be familiar with myriad issues, but — practically speaking — it was not possible to be an expert on all in depth. It had long been apparent to us that a structure [for KMS] based on professional department managers was needed. But in those days it was unthinkable. We had to do the best we could with the very limited resources available.

“KMS is a changed organization today, with a highly capable and professional staff of 14,” she observed. “The existing system of department managers with expertise in specific fields and the opportunity for them to concentrate on their specific areas unquestionably provides more effective service to the organization. KMS fiscal and membership operations are fully computerized.

“There are a for-profit subsidiary and related organizations — namely, KMS Services, Inc., KaMMCO and MSC,” she continued. “From the administrative point of view, these are the major overall changes in KMS today as compared to 1959. And now another major project is taking shape in preparation for national health care reform: KMS is considering the creation of a statewide physician network.”

### **Professional Achievements**

In addition to the assignments mentioned above, as Associate Executive Director Val most recently

has held the titles of Managing Editor of *KANSAS MEDICINE*, Director of the KMS Impaired Professionals Program, and President of KMS Services, Inc.

Tort reform legislation in 1986 mandated the creation of the KMS Impaired Professionals Program, a contractual arrangement between the Kansas State Board of Healing Arts and the KMS Impaired Provider Program, which Val helped to develop. She is the Director of this intervention, referral and monitoring program.

“If I had to single one out,” Val said, “perhaps my favorite among the many projects and programs was achieving unified membership with AMA. The KMS House of Delegates voted on this question four times, approving it twice, only to disallow it again. Although transitory, this issue elevated Kansas at the federation level. It is rewarding and encouraging to note that, while AMA membership nationally is no more than 50%, in Kansas it stands at 75%. This is commitment on the part of Kansas physicians,” she added. “This is putting your priorities where they belong. I salute these physicians for recognizing the importance and value of the AMA to American medicine.”

Seeing women assuming a larger role in organized medicine has been rewarding for Val. “In the early 1980s, KMS was one of the first six states to begin the mainstreaming of women physicians into the leadership ranks of organized medicine,” she recalled. “Already a number of outstanding



*At the KMS annual meeting, 1977, with past presidents Thomas P. Butcher and Kenneth L. Graham.*

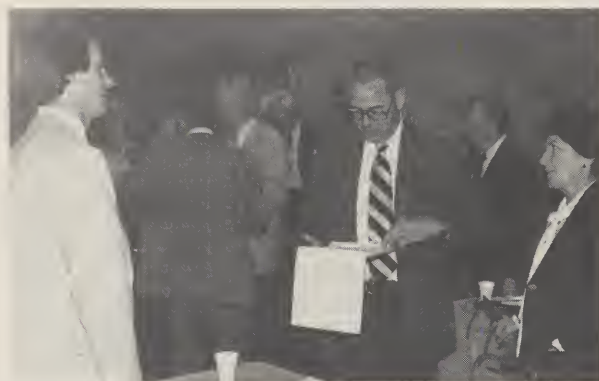


women physicians have become actively involved with the Kansas Medical Society. The culmination of these initial efforts will occur on May 7, 1995, when Dr. Linda D. Warren, of Hanover, wields the President's gavel. She is already an AMA Delegate and a member of the AMA Council on Constitution and Bylaws."

The Auxiliary/Alliance's transformation into a more modern, viable counterpart to the KMS has been equally gratifying to Val. "KMSA is held up as a shining example nationwide for its efforts, successes and working relationship with its state medical society," Val stated.

### Observations on KMS Leadership

Val speaks enthusiastically of the physicians with whom she has worked over the years. "Every one of the KMS Presidents is a special person to me," she states. "In fact, my admiration never ceases for the selfless, dedicated physicians who take the time to work for the good of organized medicine — as committee members, chairmen, officers at local and state levels, councilors, delegates and those working on special projects. This spirit of involvement makes a difference — and a better



*Impromptu conference with Jerry Slaughter (left) and President Warren E. Meyer (center) at the KMS annual meeting in 1979.*

world for us all."

She expresses great admiration for Executive Director Jerry Slaughter, "the person singularly responsible for bringing the Kansas Medical Society into the 21st century." Noting his ability to explain complex issues in easily understood terms, Val adds, "He is a genius of an administrator. His dedication to KMS is boundless, and his sense of professionalism, propriety and fairness is be-



*Governor Mike Hayden signs the Alzheimer's Disease Awareness Month proclamation, October 15, 1990, as Val (left) looks on.*

yond reproach. In my opinion, he was tailor-made to head the KMS operation, and this organization is in very good and able hands.

"I am overcome with emotion, and words fail me in trying to express adequately my gratitude and appreciation for the terrific opportunity to work for KMS," she said. "The stimulation of associating with physicians, who are highly educated, dedicated, principled individuals; the endless variety of issues; the confidence of the organization in my ability; the freedom of action; the wonderful, able and supportive staff — all these have made the years simply fly by. I've looked forward to every day of coming to work."

### Honors

A tireless advocate of improved care for victims of Alzheimer's disease, Val was appointed to the Alzheimer's Task Force Advisory Council. Unfortunately, her interest was born of personal experience with the effects of the disease when in 1977 her mother was diagnosed with it. Val took care of her mother in their home until shortly before Mrs. Lange died in 1992.

In 1983, she was presented with the Governor's Certificate of Recognition for "outstanding performance and exceptional contributions to the State of Kansas." This was prompted by her work on the Kansas Council for Library Services to the Visually and Physically Handicapped.

Val became an honorary life member of the Kansas Medical Society with the adoption of Resolution 93-23 on May 2, 1993, at which time she was also officially commended for "35 years of outstanding service to the Kansas physicians" and "her inestimable contribution to the KMS."

The breadth of her interests and dedication can be appreciated by reviewing her society memberships: American Association of Medical Society Executives, American Medical Writers Association, American Public Health Association, American Association of Medical Assistants, Kansas Society of Association Executives and the Linguistic Society of America. She is also a notary public and serves on the Alzheimer's Task Force Advisory Council and the Council for Library Services to the Visually and Physically Handicapped.

### Future Plans

When groups of Russian theatrical, museum and artistic professionals, industry CEOs, lawmakers and government officials visit Kansas, she and Al spend considerable time with them, acting as interpreters, guides and hosts. The Russians come



*Val at the AMA annual meeting in Chicago, 1992.*

as part of an official cultural exchange program at the governors' level, and Val looks forward to more activities between Kansas and its sister region in and around St. Petersburg. (The two areas are geographically comparable.)

About her retirement plans, Val says, "At this point, my number-one priority will be to learn to relax!" And though she has learned many things in her busy life, and learned them well, we doubt she will succeed this time. She has too many interests. As long as Al is able to garden, Val will no doubt continue to can, freeze and dry huge quantities of vegetables, fruits and jams. Then there are operas to listen to, concerts to attend, a l-o-n-g list of must-read and re-read books, friends to visit, beaches to comb, chocolate to sample . . . maybe even a little consulting for KMS. And there is always the prospect of volunteering to help shut-ins. Val will be too busy to learn to relax.

Don't even try, Val. Just enjoy being busy in the ways you choose. *Ave atque vale!*





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# Meniere's Disease

GREGORY A. ATOR, M.D.\*, *Kansas City*

**M**eniere's disease is a common balance disorder. The association of fluctuating hearing loss and tinnitus, vertigo and sense of fullness in the ears was first noted by Prosper Meniere (sometimes spelled Menière or Ménière) in 1861.

The classic patient with Meniere's disease has the onset in one ear of fullness or sensation of pressure, accompanied by fluctuation in hearing and a loud tinnitus. These episodes are associated with true vertigo, wherein the patient notes the sensation of a whirling motion frequently accompanied by nausea and vomiting. The attacks usually last for several hours and may be followed by unsteadiness or imbalance for some period of time. Early in the disease the hearing loss, which is primarily low-frequency, recovers and the patient may have nearly normal hearing.

With continued attacks, the symptoms change somewhat. In the affected ear, the patient may have persistent tinnitus which is louder during the course of the attacks. Hearing loss gradually becomes permanent, stabilizing at a moderate to severe flat sensorineural hearing loss. The vertiginous attacks continue, but are frequently not accompanied by major fluctuations in hearing.

Variations in this typical picture can occur. Early in the course of the disease, some patients may manifest only cochlear dysfunction with fluctuation in hearing, accompanied by tinnitus and fullness in the affected ear. This has been termed a cochlear variant of Meniere's. These patients must be followed carefully, as they may go on to develop the full triad, with the addition of vestibular symptoms at some time in the course of the disease. Early treatment may prevent the progress of the disease, especially if intervention can be made at the stage of fluctuation in hearing only.

Occasional patients may complain of drop attacks with a sensation of being thrust to the ground. This is likely due to primary involvement of the otolith vestibular organs, rather than the

usual semicircular canals. Retrocochlear lesions must always be in the differential diagnosis of these types of symptoms. The validity of the diagnosis should be reassessed periodically in these patients to insure that an alternative diagnosis is not missed. The diagnosis rests primarily on historical features, but electrocochleographic confirmation is frequently helpful. Some female patients, especially those with early disease, will note the onset of aural fullness and imbalance in the days preceding the onset of the menstrual period, which is presumably brought about by fluid shifts accompanying the hormonal fluctuations of the menstrual cycle (Andrews-Ator-Honrubia, 1992).

## Incidence

The incidence of Meniere's disease is 15.3 per 100,000 in the United States, making this one of the more common disorders of the balance system (Wladislavosky-Waserman, 1984 #3). The disease is more common among those of European descent and very rare in blacks. The incidence of bilateral involvement at some time over the course of the disease has been estimated at 30-50% and usually occurs within five years after onset of the disease (Paparella, 1984 #1). The genetics of the disorder is not clear, but up to 20% of patients have a family history. It usually lasts for years, and from 40% to as many as 80% of patients may undergo remission.

## Pathophysiology

The underlying pathophysiology of the disorder was elucidated by Hallpike and Cairns in 1938. Their description of the pathologic entity termed endolymphatic hydrops has been histologically confirmed in many subsequent cases of Meniere's. The most important finding is increased volume (hydrops) of the endolymphatic space. The precise mechanism of the Meniere's symptom complex is unclear, but the onset of increased volume in the endolymphatic space of the inner ear is necessary for endolymphatic hydrops to occur. The rupture of the thin membrane surrounding the endolymphatic space, allowing admixture of the endolymphatic and perilymphatic

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fluids, is probably responsible for the auditory findings and, through an unclear mechanism, the balance disorder. Alterations in the cellular milieu produce malfunction of the auditory end receptors (hair cells) and ultimately lead to cell death and sensorineural hearing loss. Many different mechanisms can induce the pathological findings of endolymphatic hydrops. The most common is the idiopathic variety of Meniere's, but other causes include trauma and infection. A common postinfectious etiology comes from syphilitic involvement of the labyrinth and must be ruled out in the workup of these patients.

### Treatment

The treatment of Meniere's is primarily medical. This is frequently efficacious and should be employed in all patients. Surgical therapy is reserved for patients experiencing failure of medical therapy and who have severe disease which is affecting their lifestyle or livelihood.

*Medical Treatment.* The medical treatment of Meniere's has two aspects: acute symptomatic control and long-term control of symptoms. Symptomatic treatment of the acute episode is accomplished using standard therapy for vertigo. Vestibular suppressants such as meclizine can be used for mild to moderate attacks, with the minor tranquilizers such as diazepam (Valium) added for severe attacks. The accompanying nausea and vomiting can be treated with various antiemetics such as prochlorperazine.

Long-term control of Meniere's disease is designed to alleviate the endolymphatic hydrops which is presumably responsible for the manifestations of the disease. Since a fluid overload of the inner ear, specifically the endolymphatic space, is thought to be responsible, long-term control strategies attempt to reduce this fluid burden. The first-line therapy which should be employed in all patients is salt restriction. Ideally, all salt added at the table and as much additional salt as possible should be eliminated. Preprocessed foods and cured meats are very high in salt and must be avoided. Many patients on this regimen will note the onset of symptoms within several days of the ingestion of a bolus of salt, while others may be relatively insensitive to daily changes in salt intake. Many clinicians also urge elimination of caffeine from the diet. Diuretics may be added to the regimen, depending on the severity of the symptoms. Triamterene and hydrochlorothiazide (Dyazide, 1 tablet every day) or acetazolamide (250 mg twice a day) may be

employed initially.

Many patients will have an excellent response to this medical regimen and will achieve complete control of their attacks. The most compelling reason to use medical therapy in these patients is the possibility that by reducing the frequency of membrane breaks related to endolymphatic hydrops, the patient not only will have less frequent vertiginous attacks, but also may have less disturbance, and ultimately less residual loss, of hearing and organ function. Most patients will have a good response to medical therapy, but patients failing such therapy may be considered for surgical management.

*Surgical treatment.* Many procedures have been proposed in the past for control of Meniere's disease symptoms. Two main classes of surgical procedures are available: shunts of the endolymphatic system and ablative procedures such as labyrinthectomy or vestibular nerve section.

The rationale for shunt procedures is a mechanical attempt to reduce the fluid overload present in the endolymphatic system. The endolymphatic fluid is produced in the stria vascularis and absorbed in the endolymphatic sac, which is adjacent to the dura of the posterior fossa. Meniere's disease has been thought to involve a deficiency in fluid absorption from the endolymphatic sac. A stent, usually silastic, is placed into the endolymphatic system, presumably allowing excess fluid to drain out of the endolymphatic sac. The fluid is released into the mastoid area, where it is absorbed by the mastoid mucosa. Theoretically this results in decompression of the endolymphatic space of the inner ear. In fact, most of these surgical defects probably do not remain open and probably only result in an increased physiologic volume of the sac. The primary benefit from endolymphatic sac surgery may be the decompression and removal of bone associated with surgical exposure of the sac, as opposed to any opening made in the sac. This procedure controls vertigo in approximately 60-70% of patients for at least some period of time (Brown, S.J., Men.II). Relief of hearing complaints is less reliable, although stabilization of hearing is anticipated. Because of these results and the low morbidity of the procedure, many clinicians employ this as a first procedure in those patients needing some type of surgical intervention due to the severity of symptoms and failure of medical therapy.

The other class of surgical procedure employed in the management of Meniere's disease includes ablative procedures such as labyrinthectomy or

vestibular nerve section. Labyrinthectomy has been the standard procedure employed in patients with no useful hearing who are plagued by persistent vestibular dysfunction. The labyrinth and vestibule are removed, the goal being to destroy all remaining viable and diseased vestibular epithelium in an effort to prevent intermittent discharges of these neurons, which is interpreted as motion by the brain. An inevitable side effect of this procedure is the loss of any auditory function remaining in the cochlea. Although this procedure is quite reliable, with 90% of patients experiencing relief from vertigo, some patients will continue to have symptoms due to incomplete ablation or possibly regeneration. Because of the loss of auditory function and possible subtotal ablation, the vestibular nerve section was developed. This can be performed using a translabyrinthine approach for those patients with no residual hearing or via a middle fossa or retrolabyrinthine approach for those patients with useful hearing. In these procedures the vestibular portion of the nerve is sectioned, while preserving the hearing function of the cochlea. An attempt is made to

remove the associated Scarpa's ganglion cells located in the internal auditory canal and thereby reduce the likelihood of regeneration. Approximately 95% of patients will experience relief as a result of this procedure (REF #91).

Following is a framework for use of these procedures in the patient with severe Meniere's disease who has failed medical therapy. The patient with fluctuating hearing and episodic vertigo is an excellent candidate for an endolymphatic shunt procedure and in many cases (60%) can be expected to have cessation of hearing fluctuation and control of vertigo after the procedure. If the patient continues to have vertiginous symptoms and the disease is unilateral (hearing fluctuation, tinnitus and fullness in one ear only), the patient might at this point undergo a vestibular nerve section, with a greater than 95% chance of controlling the vertigo.

A problem arises in those patients with bilateral disease who undergo surgery because although fairly good success is attained in controlling vestibular symptoms, some bilateral cases develop problems in both ears, and thus the surgery may contribute to bilateral vestibular deficits. Because of the importance of vestibular function in maintaining orientation, this becomes a very difficult situation and one to be avoided when possible. The possibility of bilateral disease has also led to a preference for the selective sectioning of the vestibular nerve with preservation of hearing in surgical treatment to lessen the possibility of bilateral deafness.

### Summary

Meniere's disease is one of the most common etiologies for dizziness in the United States. The mainstay of therapy for Meniere's is medical therapy. Symptomatic treatment is employed, but long-term prophylaxis is emphasized, with salt restriction and diuretic administration as needed. A prophylactic approach can prevent many attacks and ameliorate those that do occur. Patients with moderate to severe symptoms who fail medical therapy may be candidates for endolymphatic sac surgery, since this procedure is successful in a majority of patients and has low morbidity. Those patients in whom an endolymphatic shunt fails and who continue to have severe symptoms may undergo selective sectioning of the vestibular nerve, while patients with no residual hearing may be offered translabyrinthine nerve section.

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# Pseudomonas Osteomyelitis Following Puncture Wounds of the Foot

JOHN S. TOOHEY, M.D.,\* *Wichita*

**P**uncture wounds of the foot are very common. *Pseudomonas aeruginosa* osteomyelitis and arthritis is a well known complication of puncture wounds of the foot. The purpose of this report is to outline our experience and recommendations regarding such wounds.

## Methods

Nine patients were evaluated for *Pseudomonas* osteomyelitis or arthritis of the foot secondary to puncture wounds. All patients sought treatment immediately following their puncture wounds. They were given tetanus prophylaxis, local wound care and instructions for observation. The average time of onset to development of symptoms was approximately six days. The patients then received a variety of oral antibiotic treatments, usually consisting of a cephalosporin. Progression of symptoms led to further evaluation and subsequent roentgenograms. The usual delay in obtaining roentgenogram evaluation was 27 days. By this time the patients had presented with an indolent infection. The delay in diagnosis was then a total of 5.5 weeks.

Of the nine patients, three were treated with intravenous antibiotics for at least three weeks without further resolution of symptoms. The other six patients had immediate incision and drainage. Appropriate intravenous antibiotics completed the treatment. It appeared that patients who underwent antibiotic treatment following surgical debridement improved most rapidly. One patient in the latter group had a recurrence of the infection after two years. Most patients did not have fever, and the sedimentation rates were rarely greater than 30 mm.

Two years following treatment, all nine patients were evaluated. One patient had a recurrent calcaneal osteomyelitis. This responded to six weeks of parenteral antibiotics. At a subsequent two-

year follow-up, the patient showed no signs of recurrence. One adolescent patient had an infection involving the growth plate of the proximal phalanx of his foot (see Figure 1). The infection resolved with appropriate surgical and antibiotic treatment. However, the growth plate stopped functioning. The remaining seven patients' infections resolved after surgical debridement and parenteral antibiotics lasting six weeks.

## Discussion

Puncture wounds and *Pseudomonas* osteomyelitis have a clear association. This was first reported by Johanson in 1968.<sup>15</sup> A number of other reports and studies have documented this relationship.<sup>1,2,4,6,8,12-14,17-19,22</sup> Most patients are not ill and do not have other systemic symptoms or findings. Studies indicate that osteomyelitis or arthritis secondary to *Pseudomonas aeruginosa* is a distinct clinical entity, with common clinical and laboratory findings.<sup>5,8,21</sup> In the pediatric population, patients with this disease are older than those with other forms of osteomyelitis.<sup>16-18</sup> Normal sedimentation rates and white blood cell counts are present.<sup>3</sup> Lang noted that three of eight patients with osteomyelitis of the calcaneus had puncture wounds 12 to 30 days prior to admissions.<sup>16</sup> In an interesting study, Fisher et al. cultured pieces of the various layers from new and used shoes. They found a statistically significant increase in *Pseudomonas* organisms in used shoes. The researchers showed that old and used sneakers were the source of the *Pseudomonas* osteomyelitis. They hypothesized that as the sole becomes worn, water can enter the inner layers of the sole, either from within the shoe or from the shoe exterior. The spongy inner layers of the sole create a suitable environment for the growth of *Pseudomonas*. If a child steps on a nail, pieces of the sneaker sole may be inoculated into the tissues of the foot. This retained foreign body contaminated with the organism could lead to various infections.<sup>7</sup> Elliott, Jacobs, and Johanson have provided many retrospective analyses.<sup>6,14,15</sup> Sup-

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Figure 1A. *Pseudomonas* osteomyelitis involving growth plate of second proximal phalanx.



Figure 1B. Follow-up roentgenogram demonstrating complete destruction of growth plate.

portive evidence suggests that aggressive treatment is necessary. They have advocated the need for adequate early surgical exploration and debridement. Most often, typical purulence is not found, only granulation tissue. For some reason, the surgical decompression provides a more rapid resolution of symptoms. The period of intravenous antibiotic antimicrobial treatment varies from three to six weeks.<sup>11,13,18,22</sup>

Chusid and others have suggested that *Pseudomonas aeruginosa* appears to have a propensity for infecting cartilage.<sup>2</sup> In Johanson's original study, there was significant involvement of the articular cartilage or epiphyseal growth plate.<sup>15</sup>

In these injuries, there is usually a period of one to two weeks after the original insult before an obvious deep infection becomes evident. Initial symptoms are pain and swelling. The patient is afebrile. Laboratory data are not usually abnormal. X-rays are also normal. Early diagnosis is aided by a high index of suspicion. Aggressive initial treatment should be initiated when a puncture wound has occurred and is not responding within seven to ten days following initial therapy.

The role of antibiotics in the initial treatment is not clear. There seems to be little indication for their use on the date of injury unless there are unusual circumstances. Fitzgerald did not find statistically significant value in early antibiotic treatment of patients who subsequently developed deep *Pseudomonas* infections with osteomyelitis.<sup>8</sup> The usual antibiotic given is a cephalosporin,

which often is of no value in treating potential *Pseudomonas* infection. It may well foster further infection by gram negative organisms. Clinical presentation is characterized by minimal systemic symptoms, few laboratory abnormalities, and asymptomatic patients for a period of time until the obvious presentation of osteomyelitis. The role of newer oral agents specific for *Pseudomonas* is not clear. Early use of these agents has been advocated by some to prevent osteomyelitis.<sup>9,10</sup> However, indiscriminate use of these and other antibiotics might only foster the development of resistant organisms.

### Summary

The management of puncture wounds of the foot should include routine wound care, tetanus prophylaxis and warnings of what to look for and expect. *Pseudomonas aeruginosa* is the most commonly recovered organism in puncture wounds. Should symptoms develop, aggressive intravenous antibiotic treatment should be initiated if symptoms occur within seven days. Clinical presentation is characterized by minimal systemic symptoms, few laboratory abnormalities, and asymptomatic patients until the obvious presentation of osteomyelitis. After seven to 14 days, the wound should be surgically treated and appropriate antibiotics administered.

### REFERENCES

A list of references is available from the author.



# Coincidental Metastatic Intestinal Neuroendocrine Carcinoma and Esophageal Adenocarcinoma

OSSAMA TAWFIK, M.D., Ph.D.; MARK MOWRY, D.O., Ph.D.;  
AND MANOP HUNTRAKOON, M.D.,\* *Kansas City*

**T**he simultaneous occurrence of neuroendocrine neoplasms with carcinomas of the esophagus is extremely rare. A review of the literature revealed only five cases with this combination.<sup>1-5</sup> In all of these cases, carcinoid tumor with a squamous cell carcinoma were described.

The patient described in this report had two metastatic malignancies: a metastatic adenocarcinoma of the esophagus and a metastatic neuroendocrine carcinoma of the intestine. In addition, he had a history of several other benign neoplasms, including colloid and fetal adenomata of the thyroid gland and tubulovillous and adenomatous polyps of the colon.

## Case Report

A 78-year-old white male sought medical advice because of progressive dysphasia, regurgitation of liquids and solids and weight loss over a period of several months. An upper endoscopic examination, performed 10 days prior to hospital admission, revealed a near totally occluding mid-esophageal mass, which histologically was invasive, moderately differentiated adenocarcinoma. Significant past surgical history included total thyroidectomy (September 1962) for colloid and fetal adenomata, right inguinal herniorrhaphy (July 1981) and colonic polypectomies (March 1987) for tubulovillous and adenomatous polyps. Additionally, the patient had experienced a left cerebrovascular accident and right bundle branch block. The patient's medications included Synthroid (1 grain, per oral, QID) and hydrochlorothiazide (25 mg, per oral, QID).

Other than weight loss, the patient's physical examination was unremarkable. Laboratory studies were within normal limits. Computed tomography of the chest and abdomen and chest X-ray revealed a large esophageal mass occupying the distal one-half of the thoracic esophagus, and peritracheal and bilateral hilar adenopathy, with nodules in the lower lobes of the lungs, right epicardial fat, spleen and right adrenal, consistent with metastasis.

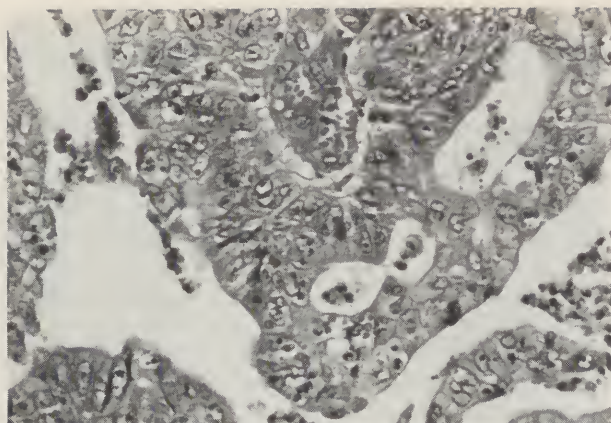
The patient underwent a Blount esophagectomy with gastric pull-up, splenectomy, multiple celiac and periesophageal lymph node biopsies and excision of masses in the wall of the terminal ileum and large bowel. Following surgery, the patient had a relatively long hospital course. He experienced *Klebsiella* pneumonia, *Candida* and *Klebsiella* urinary tract infections and wound infection. For these he received Mefoxin (1 gm, intravenously, TID), piperacillin (4 gm, intravenously, QID), ciprofloxacin (750 mg, per oral, BID) and Diflucan (100 mg, intravenously, QID). On the fourth hospital day, the patient's respiratory status deteriorated, and he required reintubation and ventilation for one week. He received repeated transfusions of packed red blood cells for anemia. He also experienced thrombocytopenia which resolved spontaneously. The patient was discharged on the 23rd day of hospitalization and is doing well at the writing of this report.

## Pathologic Findings

*Gross and microscopic descriptions.* The distal portion of the esophagus, measuring 15.5 cm in length, with an attached small fragment of stomach and multiple celiac and periesophageal lymph nodes were submitted for pathologic examination. Upon opening the esophagus, a large, fungating friable mass measuring 9.5 × 9.5 × 1.5

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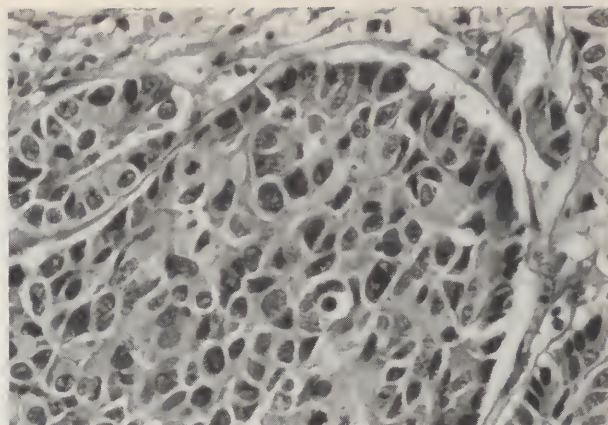


*Figure 1. Photomicrograph of the esophageal adenocarcinoma depicting the general morphology of the neoplasm. The glandular pattern is easily discerned. There is considerable nuclear pleomorphism (hematoxylin-eosin, original magnification X 400).*

cm was noted. Histologically, the tumor was a diffusely infiltrating, mucin-producing, moderately differentiated adenocarcinoma of the esophagus, arising in Barrett's mucosa, with deep penetration into the esophageal muscularis propria (Figure 1). Metastatic spread of the adenocarcinoma was seen in two of two celiac and two of five periesophageal lymph nodes.

A splenectomy specimen and other intra-abdominal tumor nodules were subsequently submitted for examination. The spleen weighed 270 gm. Its cut surface revealed a bulging, tan-white focally yellow metastatic tumor measuring  $4.5 \times 4.2 \times 4.0$  cm. The tumor nodules from the walls of the terminal ileum and large intestine measured  $3.0 \times 1.5 \times 1.0$  and  $2.3 \times 1.8 \times 0.5$  cm, respectively. Histologically, the splenic, ileal and colonic nodules were identical, showing cohesive malignant epithelial cells with scant cytoplasm and round to oval nuclei arranged mainly in solid nests and sheets with occasional acinar formation (Figure 2). Also noted was palisading of the basal cell layer, a high mitotic activity (54/10 HPF) and areas with extensive necrosis, all features characteristic of neuroendocrine carcinoma (Figure 2). The transmural involvement seen in the terminal ileum specimen is highly suggestive of that site being the origin of the neuroendocrine carcinoma. The ileal mucosa was also involved, but with no mucosal ulceration.

**Histochemical and immunohistochemical studies.** The esophageal adenocarcinoma was strongly positive for mucicarmine, while the splenic and intestinal neuroendocrine carcinoma was negative. Immunohistochemically, the adenocarci-



*Figure 2. Photomicrograph of the splenic neuroendocrine carcinoma depicting the nesting of the tumor cells. Peripheral palisading is easily noted. High mitosis and individual cell necrosis are also noted throughout (hematoxylin-eosin, original magnification X 400).*

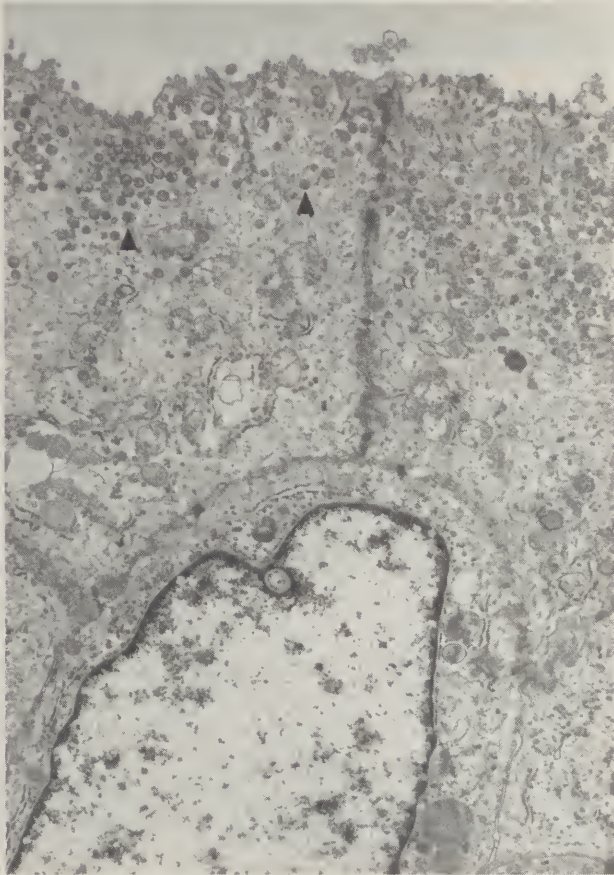
noma reacted positively for pancytokeratin and negatively for chromogranin, while the neuroendocrine carcinoma showed an opposite reactive pattern, with negativity for pancytokeratin and positivity for chromogranin. Both neoplasms reacted positively for neuron-specific enolase. However, the neuroendocrine carcinoma had a significantly stronger reactivity for that enzyme.

**Electron microscopic studies.** Electron microscopic (EM) examination of the esophageal tumor showed columnar cells arranged in glandular structures with microvilli at the luminal surface and well developed desmosomes (Figure 3). Many cells displayed numerous mucin granules near the luminal surface (Figure 3). Tissue from the spleen showed cohesive, round to oval cells with occasional desmosomes, elongated cytoplasmic processes sandwiched between neighboring cells and large nuclei with scant cytoplasm. Some of these cells contained electron-dense, membrane-bound granules measuring 100-140 nm (Figure 4).

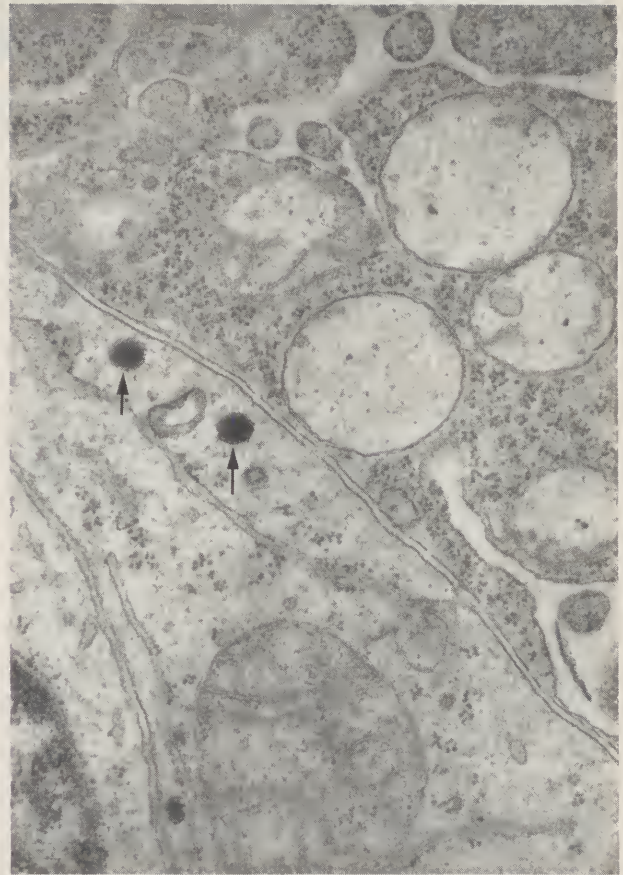
## Discussion

Since first reported by Billroth in the latter years of the nineteenth century, there has been a steady increase in the number of reported cases describing the simultaneous occurrence of multiple malignant neoplasms. Interestingly, several studies have demonstrated an incidence of 12 to 53% of second primary malignancies in patients with carcinoid tumors.<sup>2,4,6-8</sup> This incidence far exceeds the expected occurrence of secondary malignancy by chance (2%), or by the known propensity of





*Figure 3. Electron micrograph of the esophageal tumor showing columnar cells with well developed desmosomes and mucin granules (arrowheads) near the luminal surface (original magnification X 6300).*



*Figure 4. Electron micrograph of the splenic tumor showing rare electron-dense, membrane-bound granules (arrows) in the cytoplasmic processes (original magnification X 25,000).*

patients with cancer to develop a second primary (6%).<sup>9</sup> Zucker et al. have reported an association of other gastrointestinal malignancy in 19 to 47% of patients with ileal carcinoid.

Small cell (undifferentiated) neuroendocrine carcinomas are aggressive neoplasms that have been described in a wide variety of sites including skin, lungs, breast, prostate, salivary glands, esophagus, stomach and colon.<sup>11,12</sup> These neoplasms are characterized by an early dissemination and are rapidly fatal. Although several primary sites could be suggested for this patient's neuroendocrine carcinoma, an ileal origin is favored. The presence of a transmural ileal involvement supports this theory. Numerous hypotheses have been proposed for the histogenesis of neuroendocrine carcinomas. Most recent is the thought that there is a divergent differentiation from pluripotential stem cells of the endoderm, as opposed to the earlier theory of an origin from the enteric APUD cells of neural crest derivation.

The neuroendocrine carcinoma in this case

must be distinguished from composite or mixed adenocarcinoid as well as collision tumors. The lack of multidirectional differentiation of a single neoplasm into adenocarcinoma and neuroendocrine tumor excludes the diagnosis of a composite tumor. In addition, an absence of areas of malignancy in which the adenocarcinoma abuts the carcinoid tumor precludes the possibility of a collision tumor. Finally, while the immunohistochemical results support the diagnosis of neuroendocrine carcinoma, the presence of the pleomorphism, high mitotic rate, small cell size, extensive necrosis and rare neurosecretory granules by electron microscopy differentiate this tumor from the classic carcinoid type.

Of particular interest in this case is the extremely rare simultaneous occurrence of carcinoid and esophageal carcinoma. In fact, only five cases of such a combination have been reported in the literature, and all have been associated with esophageal squamous cell carcinoma.<sup>1-5</sup> As far as

*(Continued on page 332.)*



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## PRESIDENT'S MESSAGE

(Continued from page 310.)

of office or hospital care per day, making decisions on who has the "highest level of expertise" to care for any particular diagnosis.

- A discussion was held on new regulations proposed by HCFA on full payment for extended providers (specifically, physician assistants and nurse practitioners) to 100% of what a physician would be paid (increased from the current 65%). Attention was called to a proposal in the Clinton health care plan having to do with Medicare savings that indicates all physicians on a medical staff will have a 15% reduction in all future payments should the total of the Part B physicians' cost at their hospital exceed 120% of the average of such expenditures.

- Report H: physician hospital organizations, including advantages and disadvantages. Anyone interested in this area is encouraged to read this report.

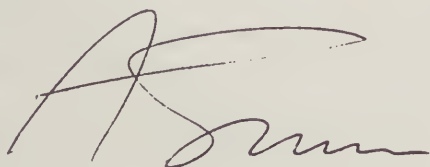
- Report I: suggested areas of review of managed care contracts.

- Report Z: comprehensive discussion of practice sales to hospitals.

- An excellent review of the various health care plans proposed by Congress was presented, along with a critique of the advantages and disadvantages of the employer mandate, which is being hotly debated in the AMA at this time.

I wish to assure physicians in the state of Kansas that their delegates to the AMA are working very hard on these important issues. As AMA Executive Vice President Dr. James Todd has observed, the ship of reform is still at sea and, through the AMA, physicians are influencing its direction. To continue to do so, we need the input of all physicians.

In my January message, I will give you my impressions of the AMA Interim Meeting. Meanwhile, of course, you should look for reports in *American Medical News*, which will give you detailed coverage of many of these subjects.



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The author will be asked to review the **galley proof** prior to publication. Although editing and proofreading will be done with care, the author is responsible for accuracy of material published. The galley proof is for correction of **ERRORS**; rewriting of material *must* be done prior to submission. Authors are urged to check manuscripts and galley proof carefully for errors that could result in inaccurate information.

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## COINCIDENTAL CARCINOMA

(Continued from page 329.)

we know, our patient is the first case of a malignant neuroendocrine carcinoma associated with an adenocarcinoma of the esophagus.

In conclusion, we have presented the first reported case of simultaneous occurrence of metastatic esophageal adenocarcinoma and neuroendocrine carcinoma of the intestine.

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## THE WAY IT WAS

This month's column is an excerpt from "LSD-25 — Stop, Look and Question," by Kenneth E. Godfrey, M.D., which appeared in the September 1968 issue of the journal.

**T**o be able to know anything thoroughly one must examine that subject from all sides. We must realize the danger of this drug and also its probable capacity as a usable tool in the hands of a

responsible and well trained psychiatrist. Here I would like to recommend for your reading two articles from *Medical Opinion and Review*, September 1967, "Something's Happening" by Joseph Downing, M.D., and "Culture's Impact on Adolescence" by Irvin Markowitz, M.D.

If you are unfamiliar with the . . . suggested reading by Dr. Downing you might be able to catch up pretty quickly. I will quote from his article: "So many parents have values of social prestige and high grades rather than beauty and laughter. As our standards of living have gone up, our standards of loving have gone down. Although I am concerned about the way drugs are being used, I am less worried about the young people who are using these drugs than I am worried about us, about the example we are setting, our distance from the young people, our refusal to look at and talk about the truth of our society in ourselves. They are looking; and they use LSD and similar drugs in the hope of looking more closely."

We can help bridge this gap in communication between ourselves and the younger generation by retaining our integrity, by not only looking at ourselves but in listening, to look, to truly attempt to understand what our younger generation is saying. We should be able to hold our own composure when we perceive that our advice and truly empathetic approaches are not immediately accepted by the younger or our own generation. For any process to work takes time and we can wait.

We should use our education to objectively observe, study, and critically question the so-called news from all kinds of media. Even some of our best scientific magazines have been fooled and have published articles that were far from scientific because they didn't question the article closely enough. Many of us have been guilty of accepting without question the conclusions of the author of such an article and repeating what he has concluded as a proven fact no matter how unscientific the article. We are old enough, wise enough, and intelligent enough to know that the truth is arrived at through process. That process we call scientific study. And all of us in this day must be scientists whether we are housewives, history professors, college administrators, nuclear physicists or astrologists.

We recognize a gap in communication, as well as the many difficulties that gap produces. Yet we can do something about it and it is time that we stop, look and question, and then communicate.



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The Journal Of The Kansas Medical Society

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Gonorrhea in Kansas, 1992 .....	174	Lee S. Fent II, M.D., <i>Newton</i>	
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## ALLIANCE NEWS

(Continued from page 314.)

professionals and families, we must continue to work to help Kansas children. We must have a mission to focus attention on their needs and to assure those needs are met.

There is some good news about children in Kansas. Several health indicators show significant improvement — especially in the child death and infant mortality rates. Measured over a 10-year

period, these indicators show improvement rates of 23% and 16.8%, respectively. These are positive trends on which to build.

I hope you are preparing for a happy holiday season and a new year full of promise for medicine in general — and for the children of Kansas. Happy holidays!

*Cathy Wilcox*



**Reference:** 1. Jones PH, et al. Once-daily pravastatin in patients with primary hypercholesterolemia: a dose-response study. *Clin Cardiol.* 1991;14:146-151.

## PRAVACHOL® (Pravastatin Sodium Tablets) CONTRAINDICATIONS

Hypersensitivity to any component of this medication.

Active liver disease or unexplained, persistent elevations in liver function tests (see WARNINGS).

**Pregnancy and lactation.** Atherosclerosis is a chronic process and discontinuation of lipid-lowering drugs during pregnancy should have little impact on the outcome of long-term therapy of primary hypercholesterolemia. Cholesterol and other products of cholesterol biosynthesis are essential components for fetal development (including synthesis of steroids and cell membranes). Since HMG-CoA reductase inhibitors decrease cholesterol synthesis and possibly the synthesis of other biologically active substances derived from cholesterol, they may cause fetal harm when administered to pregnant women. Therefore, HMG-CoA reductase inhibitors are contraindicated during pregnancy and in nursing mothers. **Pravastatin should be administered to women of childbearing age only when such patients are highly unlikely to conceive and have been informed of the potential hazards.** If the patient becomes pregnant while taking this class of drug, therapy should be discontinued and the patient apprised of the potential hazard to the fetus.

## WARNINGS

**Liver Enzymes:** HMG-CoA reductase inhibitors, like some other lipid-lowering therapies, have been associated with biochemical abnormalities of liver function. Increases of serum transaminase (ALT, AST) values to more than 3 times the upper limit of normal occurring on 2 or more (not necessarily sequential) occasions have been reported in 1.3% of patients treated with pravastatin in the U.S. over an average period of 18 months. These abnormalities were not associated with cholestasis and did not appear to be related to treatment duration. In those patients in whom these abnormalities were believed to be related to pravastatin and who were discontinued from therapy, the transaminase levels usually fell slowly to pretreatment levels. These biochemical findings are usually asymptomatic although worldwide experience indicates that anorexia, weakness, and/or abdominal pain may also be present in rare patients.

As with other lipid-lowering agents, liver function tests should be performed during therapy with pravastatin. Serum aminotransferases, including ALT (SGPT), should be monitored before treatment begins, every six weeks for the first three months, every eight weeks during the remainder of the first year, and periodically thereafter (e.g., at about six-month intervals). Special attention should be given to patients who develop increased transaminase levels. Liver function tests should be repeated to confirm an elevation and subsequently monitored at more frequent intervals. If increases in AST and ALT equal or exceed three times the upper limit of normal and persist, then therapy should be discontinued. Persistence of significant aminotransferase elevations following discontinuation of therapy may warrant consideration of liver biopsy.

Active liver disease or unexplained transaminase elevations are contraindications to the use of pravastatin (see CONTRAINDICATIONS). Caution should be exercised when pravastatin is administered to patients with a history of liver disease or heavy alcohol ingestion (see CLINICAL PHARMACOLOGY: Pharmacokinetics/Metabolism). Such patients should be closely monitored, started at the lower end of the recommended dosage range, and titrated to the desired therapeutic effect.

**Skeletal Muscle: Rhabdomyolysis with renal dysfunction secondary to myoglobinuria has been reported with pravastatin and other drugs in this class.** Uncomplicated myalgia has also been reported in pravastatin-treated patients (see ADVERSE REACTIONS). Myopathy, defined as muscle aching or muscle weakness in conjunction with increases in creatine phosphokinase (CPK) values to greater than 10 times the upper limit of normal was reported to be possibly due to pravastatin in only one patient in clinical trials (<0.1%). Myopathy should be considered in any patient with diffuse myalgias, muscle tenderness or weakness, and/or marked elevation of CPK. Patients should be advised to report promptly unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever. **Pravastatin therapy should be discontinued if markedly elevated CPK levels occur or myopathy is diagnosed or suspected. Pravastatin therapy should also be temporarily withheld in any patient experiencing an acute or serious condition predisposing to the development of renal failure secondary to rhabdomyolysis, e.g., sepsis; hypotension; major surgery; trauma; severe metabolic, endocrine, or electrolyte disorders; or uncontrolled epilepsy.**

The risk of myopathy during treatment with lovastatin is increased if therapy with either cyclosporine, gemfibrozil, erythromycin, or niacin is administered concurrently. There is no experience with the use of pravastatin together with cyclosporine. Myopathy has not been observed in clinical trials involving small numbers of patients who were treated with pravastatin together with niacin. One trial of limited size involving combined therapy with pravastatin and gemfibrozil showed a trend toward more frequent CPK elevations and patient withdrawals due to musculoskeletal symptoms in the group receiving combined treatment as compared with the groups receiving placebo, gemfibrozil, or pravastatin monotherapy. Myopathy was not reported in this trial (see PRECAUTIONS: Drug Interactions). One patient developed myopathy when clofibrate was added to a previously well tolerated regimen of pravastatin; the myopathy resolved when clofibrate therapy was stopped and pravastatin treatment continued. **The use of fibrates alone may occasionally be associated with myopathy. The combined use of pravastatin and fibrates should generally be avoided.**

## PRECAUTIONS

**General:** Pravastatin may elevate creatine phosphokinase and transaminase levels (see ADVERSE REACTIONS). This should be considered in the differential diagnosis of chest pain in a patient on therapy with pravastatin.

**Homozygous Familial Hypercholesterolemia.** Pravastatin has not been evaluated in patients with rare homozygous familial hypercholesterolemia. In this group of patients, it has been reported that HMG-CoA reductase inhibitors are less effective because the patients lack functional LDL receptors.

**Renal Insufficiency.** A single 20 mg oral dose of pravastatin was administered to 24 patients with varying degrees of renal impairment (as determined by creatinine clearance). No effect was observed on the pharmacokinetics of pravastatin or its 3 $\alpha$ -hydroxy isomeric metabolite (SQ 31,906). A small increase was seen in mean AUC values and half-life ( $t_{1/2}$ ) for the inactive enzymatic ring hydroxylation metabolite (SQ 31,945). Given this small sample size, the dosage administered, and the degree of individual variability, patients with renal impairment who are receiving pravastatin should be closely monitored.

**Information for Patients:** Patients should be advised to report promptly unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever.

**Drug Interactions:** Immunosuppressive Drugs, Gemfibrozil, Niacin (Nicotinic Acid), Erythromycin. See WARNINGS: Skeletal Muscle.

**Antigynne:** Clearance by the cytochrome P450 system was unaltered by concomitant administration of pravastatin. Since pravastatin does not appear to induce hepatic drug-metabolizing enzymes, it is not expected that any significant interaction of pravastatin with other drugs (e.g., phenytoin, quinidine) metabolized by the cytochrome P450 system will occur.

**Cholestyramine/Colestipol:** Concomitant administration resulted in an approximately 40 to 50% decrease in the mean AUC of pravastatin. However, when pravastatin was administered 1 hour before or 4 hours after cholestyramine or 1 hour before colestipol and a standard meal, there was no clinically significant decrease in bioavailability or therapeutic effect. (See DOSAGE AND ADMINISTRATION: Concomitant Therapy.)

**Warfarin:** In a study involving 10 healthy male subjects given pravastatin and warfarin concomitantly for 6 days, bioavailability parameters at steady state for pravastatin (parent compound) were not altered. Pravastatin did not alter the plasma protein-binding of warfarin. Concomitant dosing did increase the AUC and C<sub>max</sub> of warfarin but did not produce any changes in its anticoagulant action (i.e., no increase was seen in mean prothrombin time after 6 days of concomitant therapy). However, bleeding and extreme prolongation of prothrombin time has been reported with another drug in this class. Patients receiving warfarin-type anticoagulants should have their prothrombin times closely monitored when pravastatin is initiated or the dosage of pravastatin is changed.

**Cimetidine:** The AUC<sub>0-12hr</sub> for pravastatin when given with cimetidine was not significantly different from the AUC for pravastatin when given alone. A significant difference was observed between the AUC's for pravastatin when given with cimetidine compared to when administered with antacid.

**Digoxin:** In a crossover trial involving 18 healthy male subjects given pravastatin and digoxin concurrently for 9 days, the bioavailability parameters of digoxin were not affected. The AUC of pravastatin tended to increase, but the overall bioavailability of pravastatin plus its metabolites SQ 31,906 and SQ 31,945 was not altered.

**Gemfibrozil:** In a crossover study in 20 healthy male volunteers given concomitant single doses of pravastatin and gemfibrozil, there was a significant decrease in urinary excretion and protein binding of pravastatin. In addition, there was a significant increase in AUC, C<sub>max</sub>, and T<sub>max</sub> for the pravastatin metabolite SQ 31,906. Combination therapy with pravastatin and gemfibrozil is generally not recommended.

In interaction studies with aspirin, antacid, 1 hour prior to PRAVACHOL (pravastatin sodium), cimetidine, nicotinic acid, or probucol, no statistically significant differences in bioavailability were seen when PRAVACHOL was administered.

**Other Drugs:** During clinical trials, no noticeable drug interactions were reported when PRAVACHOL was added to: diuretics, antihypertensives, digitals, converting-enzyme inhibitors, calcium channel blockers, beta-blockers, or nitroglycerin.

**Endocrine Function:** HMG-CoA reductase inhibitors interfere with cholesterol synthesis and lower circulating cholesterol levels and, as such, might theoretically blunt adrenal or gonadal steroid hormone production. Results of clinical trials with pravastatin in males and post-menopausal females were inconsistent with regard to possible effects of the drug on basal steroid hormone levels. In a study of 21 males, the mean testosterone response to human chorionic gonadotropin was significantly reduced ( $p < 0.004$ ) after 16 weeks of treatment with 40 mg of pravastatin. However, the percentage of patients showing a  $\geq 50\%$  rise in plasma testosterone after human chorionic gonadotropin stimulation did not change significantly after therapy in these patients. The effects of HMG-CoA reductase inhibitors on spermatogenesis and fertility have not been studied in adequate numbers of patients. The effects, if any, of pravastatin on the pituitary-gonadal axis in pre-menopausal females are unknown. Patients treated with pravastatin who display clinical evidence of endocrine dysfunction should be evaluated appropriately. Caution should also be exercised if an HMG-CoA reductase inhibitor or other agent used to lower cholesterol levels is administered to patients also receiving other drugs (e.g., ketoconazole, spironolactone, cimetidine) that may diminish the levels or activity of steroid hormones.

**CNS Toxicity:** CNS vascular lesions, characterized by perivascular hemorrhage and edema and mononuclear cell

infiltration of perivascular spaces, were seen in dogs treated with pravastatin at a dose of 25 mg/kg/day, a dose that produced a plasma drug level about 50 times higher than the mean drug level in humans taking 40 mg/day. Similar CNS vascular lesions have been observed with several other drugs in this class.

A chemically similar drug in this class produced optic nerve degeneration (Wallerian degeneration of retinogeniculate fibers) in clinically normal dogs in a dose-dependent fashion starting at 60 mg/kg/day, a dose that produced mean plasma drug levels about 30 times higher than the mean drug level in humans taking the highest recommended dose (as measured by total enzyme inhibitory activity). This same animal also produced vestibulocochlear Wallerian-like degeneration and retinal ganglion cell chromatolysis in dogs treated for 14 weeks at 180 mg/kg/day, a dose which resulted in a mean plasma drug level similar to that seen with the 60 mg/kg dose.

**Carcinogenesis, Mutagenesis, Impairment of Fertility:** In a 2-year study in rats fed pravastatin at doses of 10, 30, or 100 mg/kg body weight, there was an increased incidence of hepatocellular carcinomas in males at the highest dose ( $p < 0.01$ ). Although rats were given up to 125 times the human dose (HD) on a mg/kg body weight basis, their serum drug levels were only 6 to 10 times higher than those measured in humans given 40 mg pravastatin as measured by AUC.

The oral administration of 10, 30, or 100 mg/kg (producing plasma drug levels approximately 0.5 to 5.0 times human drug levels at 40 mg) of pravastatin to mice for 22 months resulted in a statistically significant increase in the incidence of malignant lymphomas in treated females when all treatment groups were pooled and compared to controls ( $p < 0.05$ ). The incidence was not dose-related and male mice were not affected.

A chemically similar drug in this class was administered to mice for 72 weeks at 25, 100, and 400 mg/kg body weight, which resulted in mean serum drug levels approximately 3, 15, and 33 times higher than the mean human serum drug concentration (as total inhibitory activity) after a 40 mg oral dose. Liver carcinomas were significantly increased in high-dose females and mid- and high-dose males, with a maximum incidence of 90 percent in males. The incidence of adenomas of the liver was significantly increased in mid- and high-dose females. Drug treatment also significantly increased the incidence of lung adenomas in mid- and high-dose males and females. Adenomas of the eye Harderian gland (a gland of the eye of rodents) were significantly higher in high-dose mice than in controls.

No evidence of mutagenicity was observed *in vitro*, with or without rat-liver metabolic activation, in the following studies: microbial mutagen tests, using mutant strains of *Salmonella typhimurium* or *Escherichia coli*; a forward mutation assay in L5178Y TK + / - mouse lymphoma cells; a chromosomal aberration test in hamster cells; and a gene conversion assay using *Saccharomyces cerevisiae*. In addition, there was no evidence of mutagenicity in either a dominant lethal test in mice or a micronucleus test in mice.

In a study in rats, with daily doses up to 500 mg/kg, pravastatin did not produce any adverse effects on fertility or general reproductive performance. However, in a study with another HMG-CoA reductase inhibitor, there was decreased fertility in male rats treated for 34 weeks at 25 mg/kg body weight, although this effect was not observed in a subsequent fertility study when this same dose was administered for 11 weeks (the entire cycle of spermatogenesis, including epididymal maturation). In rats treated with this same reductase inhibitor at 180 mg/kg/day, seminiferous tubule degeneration (necrosis and loss of spermatogenic epithelium) was observed. Although not seen with pravastatin, two similar drugs in this class caused drug-related testicular atrophy, decreased spermatogenesis, spermatocytic degeneration, and giant cell formation in dogs. The clinical significance of these findings is unclear.

**Pregnancy: Pregnancy Category X:** See CONTRAINDICATIONS.

Safety in pregnant women has not been established. Pravastatin was not teratogenic in rats at doses up to 1000 mg/kg daily or in rabbits at doses of up to 50 mg/kg daily. These doses resulted in 20x (rabbit) or 240x (rat) the human exposure based on surface area (mg/meter<sup>2</sup>). However, in studies with another HMG-CoA reductase inhibitor, skeletal malformations were observed in rats and mice. PRAVACHOL (pravastatin sodium) should be administered to women of child-bearing potential only when such patients are highly unlikely to conceive and have been informed of the potential hazards. If the woman becomes pregnant while taking PRAVACHOL, it should be discontinued and the patient advised again as to the potential hazards to the fetus.

**Nursing Mothers:** A small amount of pravastatin is excreted in human breast milk. Because of the potential for serious adverse reactions in nursing infants, women taking PRAVACHOL should not nurse (see CONTRAINDICATIONS).

**Pediatric Use:** Safety and effectiveness in individuals less than 18 years old have not been established. Hence, treatment in patients less than 18 years old is not recommended at this time. (See also PRECAUTIONS: General.)

## ADVERSE REACTIONS

Pravastatin is generally well tolerated; adverse reactions have usually been mild and transient. In 4-month long placebo-controlled trials, 1.7% of pravastatin-treated patients and 1.2% of placebo-treated patients were discontinued from treatment because of adverse experiences attributed to study drug therapy; this difference was not statistically significant. In long-term studies, the most common reasons for discontinuation were asymptomatic serum transaminase increases and mild, non-specific gastrointestinal complaints. During clinical trials the overall incidence of adverse events in the elderly was not different from the incidence observed in younger patients.

**Adverse Clinical Events:** All adverse clinical events (regardless of attribution) reported in more than 2% of pravastatin-treated patients in the placebo-controlled trials are identified in the table below; also shown are the percentages of patients in whom these medical events were believed to be related or possibly related to the drug:

Body System/Event	All Events %		Events Attributed to Study Drug %	
	Pravastatin (N = 900)	Placebo (N = 411)	Pravastatin (N = 900)	Placebo (N = 411)
Cardiovascular				
Cardiac Chest Pain	4.0	3.4	0.1	0.0
Dermatologic				
Rash	4.0*	1.1	0.3	0.9
Gastrointestinal				
Nausea/Vomiting	7.3	7.1	2.9	3.4
Diarrhea	6.2	5.6	2.0	1.9
Abdominal Pain	5.4	6.9	2.0	3.9
Constipation	4.0	7.1	2.4	5.1
Flatulence	3.3	3.6	2.7	3.4
Heartburn	2.9	1.9	2.0	0.7
General				
Fatigue	3.8	3.4	1.9	1.0
Chest Pain	3.7	1.9	0.3	0.2
Influenza	2.4*	0.7	0.0	0.0
Musculoskeletal				
Localized Pain	10.0	9.0	1.4	1.5
Myalgia	2.7	1.0	0.6	0.0
Nervous System				
Headache	6.2	3.9	1.7*	0.2
Dizziness	3.3	3.2	1.0	0.5
Renal/Genitourinary				
Urinary Abnormality	2.4	2.9	0.7	1.2
Respiratory				
Common Cold	7.0	6.3	0.0	0.0
Rhinitis	4.0	4.1	0.1	0.0
Cough	2.6	1.7	0.1	0.0

\*Statistically significantly different from placebo.

The following effects have been reported with drugs in this class:

**Skeletal:** myopathy, rhabdomyolysis.

**Neurological:** dysfunction of certain cranial nerves (including alteration of taste, impairment of extra-ocular movement, facial paresis), tremor, vertigo, memory loss, paresthesia, peripheral neuropathy, peripheral nerve palsy.

**Hypersensitivity Reactions:** An apparent hypersensitivity syndrome has been reported rarely which has included one or more of the following features: anaphylaxis, angioedema, lupus erythematosus-like syndrome, polymyalgia rheumatica, vasculitis, purpura, thrombocytopenia, leukopenia, hemolytic anemia, positive ANA, ESR increase, arthritis, arthralgia, urticaria, asthenia, photosensitivity, fever, chills, flushing, malaise, dyspnea, toxic epidermal necrolysis, erythema multiforme, including Stevens-Johnson syndrome.

**Gastrointestinal:** pancreatitis, hepatitis, including chronic active hepatitis, cholestatic jaundice, fatty change in liver, and rarely, cirrhosis, fulminant hepatic necrosis, and hepatoma; anorexia, vomiting.

**Reproductive:** gynecostasia, loss of libido, erectile dysfunction.

**Eye:** progression of cataracts (lens opacities), ophthalmoplegia.

**Laboratory Test Abnormalities:** Increases in serum transaminase (ALT, AST) values and CPK have been observed (see WARNINGS).

Transient, asymptomatic eosinophilia has been reported. Eosinophil counts usually returned to normal despite continued therapy. Anemia, thrombocytopenia, and leukopenia have been reported with other HMG-CoA reductase inhibitors.

**Concomitant Therapy:** Pravastatin has been administered concurrently with cholestyramine, colestipol, nicotinic acid, probucol and gemfibrozil. Preliminary data suggest that the addition of either probucol or gemfibrozil to therapy with lovastatin or pravastatin is not associated with greater reduction in LDL-cholesterol than that achieved with lovastatin or pravastatin alone. No adverse reactions unique to the combination or in addition to those previously reported for each drug alone have been reported. Myopathy and rhabdomyolysis (with or without acute renal failure) have been reported when another HMG-CoA reductase inhibitor was used in combination with immunosuppressive drugs, gemfibrozil, erythromycin, or lipid-lowering doses of nicotinic acid. Concomitant therapy with HMG-CoA reductase inhibitors and these agents is generally not recommended. (See WARNINGS: Skeletal Muscle and PRECAUTIONS: Drug Interactions.)

## OVERDOSAGE

There have been no reports of overdoses with pravastatin.

Should an accidental overdose occur, treat symptomatically and institute supportive measures as required.



THE PRAVACHOL® DIRECTION  
IN LIPID MANAGEMENT

# Effective lipid management doesn't have to be tough



- Improves key lipids — significant reduction in LDL-C<sup>1</sup>
- Excellent safety profile
- Easy for patients — once-daily dosing, well tolerated
- Usual dose: 20 mg once daily at bedtime, with or without food

  
**PRAVACHOL®**  
pravastatin sodium 20 mg tablets

PRAVACHOL is indicated as an adjunct to diet for the reduction of elevated total and LDL-cholesterol levels in patients with primary hypercholesterolemia (Types IIa and IIb) when the response to diet alone has not been adequate.

Active liver disease or unexplained transaminase elevations, pregnancy and lactation are contraindications to the use of pravastatin sodium.

Please see CONTRAINDICATIONS, WARNINGS, PRECAUTIONS, and ADVERSE REACTIONS in the brief summary of prescribing information on the adjacent page.



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